

OKI

OKIPAGE8c LED Page Printer MAINTENANCE MANUAL

ODA/OEL/INT

1999.4. 12 Rev.6

PREFACE

This maintenance manual provides procedures and techniques for the troubleshooting, maintenance, and repair of OKIPAGE 8c.

This manual is written for maintenance personnel, but it should always be accompanied with the OKIPAGE 6c User's Manual for procedures for handling and operating OKIPAGE 8c. For repairing each component of OKIPAGE 8c, see the Troubleshooting manual.

[Notices]

The contents of this manual are subject to change without prior notice.

Although reasonable efforts have been taken in the preparation of this manual to assure its accuracy, this manual may still contain some errors and omissions. OKI will not be liable for any damage caused or alleged to be caused, by the customer or any other person using this maintenance manual to repair, modify, or alter OKIPAGE 8c in any manner.

[Warning]

Many parts of OKIPAGE 8c are very sensitive and can be easily damaged by improper servicing. We strongly suggest that OKIPAGE 8c be serviced by OKI's authorized technical service engineers.

CONTENTS

1. SPECIFICATIONS	7
1.1 Basic System Configuration	7
1.2 Printer Specifications	8
1.3 Option Specifications	9
1.4 Basic Specifications	10
2. OPERATION12	
2.1 Main Control Board (PCR PCB).....	13
2.2 Engine Control Board (PX4 PCB)	16
2.3 Power/Units	17
2.4 Mechanical Processes	18
2.4.1 Electrophotographic processing mechanism	19
2.4.2 Paper running process	25
2.5 Sensors	34
2.5.1 Paper related sensors	34
2.5.2 Other sensors	35
2.6 Correction of Color Deviation	36
2.7 Transfer Control according to Environmental Changes (Room Temperatures and Relative Humidities)	36
2.8 Form Jam Detection	37
2.9 Cover Opening	37
2.10 Toner Low Detection	38
2.11 Page Size Detection	39
2.12 Power-on Processing	40
2.12.1 Self-diagnostic test	40
3. PARTS REPLACEMENT41	
3.1 Precautions for Parts Replacement	41
3.2 Parts Layout	43
3.3 How to Change Parts	47
3.3.1 Cover Assy Rear	48
3.3.2 Motor-Fan (80-25)	49
3.3.3 Paper Eject Assy	50
3.3.4 Cover Assy Stacker, Guide Eject FD Assy	51
3.3.5 Frame Assy Upper	52
3.3.6 Plate Support Assy	53
3.3.7 Limiter 2way (L), (R) / Plate Guide (L) , (R)	54
3.3.8 Cover	55
3.3.9 PCB Assy : PCR	56
3.3.10 Motor Fan (CU)	57
3.3.11 PXF PCB/PX4 PCB	58
3.3.12 Gear Heat Assy	59
3.3.13 Main Motor (A), (B) Assy	60
3.3.14 Gear One-way (Z30)	61
3.3.15 Motor Assy BT	62
3.3.16 Power Supply Unit, Holder Inlet, Sheet Insulation	63
3.3.17 Sensor Assy Box Toner	64

3.3.18	Square-shaped Connector	65
3.3.19	Hopping Motor	66
3.3.20	Gear One-way	67
3.3.21	Feeder Unit Front	68
3.3.22	Manual Feed Hopper Assy	69
3.3.23	Guide Paper Input Assy	70
3.3.24	Two Lever Input Sensors, Lever 2nd Feed Sensor	71
3.3.25	Roller Registration, Roller Assy Hopping	72
3.3.26	Roller Hopping	73
3.3.27	PXU PCB/PXM PCB, Lever Resist Sensor	74
3.3.28	Paper End Lever	75
3.3.29	PCO PCB (Operator Panel)	76
3.3.30	Holder Gear Toner Assy	77
3.3.31	Plate Latch Lever (FD), Spring Latch Lever (FD)	78
3.3.32	Belt Cassette Assy	79
3.3.33	High Voltage Power Supply Unit, Bracket HV (BT) Assy	80
3.3.34	Eraser Bracket Assy, Eraser Bracket (KCM) Assy	81
3.3.35	Shaft Link	82
3.3.36	Contact (BL-R) Assy, Contact (CL-R) Assy	83
3.3.37	Contact (BL-L) Assy, Contact (CL-L) Assy	84
3.3.38	Contact SB Assy	85
3.3.39	PXC PCB	86
3.3.40	Heat Unit Assy	87
3.3.41	Oil Roller Assy	88
3.3.42	Lever Lock Heat (L)/(R), Guide Side Heat, Spring Lock	89
3.3.43	PXL PCB	90
3.3.44	Heat Unit Guide Assy	91
3.3.45	Holder LED Assy, LED Head	92
4.	ADJUSTMENTS	93
4.1	Maintenance Modes and Their Functions	93
4.1.1	User maintenance mode	93
4.1.2	System maintenance mode	97
4.1.3	Engine maintenance mode	99
4.2	Adjustments after Parts Replacement	102
4.2.1	Confirm the LED head driving time	102
4.2.2	Color deviation correction	104
5.	PERIODIC MAINTENANCE	107
5.1	Periodically Replaced Parts	107
5.2	Cleaning	107
5.3	Cleaning the LED Lens Array	107
5.4	Cleaning the Pickup Roller	107
6.	TROUBLESHOOTING PROCEDURES	108
6.1	Troubleshooting Tips	108
6.2	Points to Check before Correcting Image Problems	108
6.3	Tips for Correcting Image Problems	108
6.4	Preparation for Troubleshooting	109

6.5	Troubleshooting Flow	109
6.5.1	LCD status message/trouble list	109
6.5.2	LCD message troubleshooting	122
6.5.3	Image troubleshooting	135
7.	WIRING DIAGRAM.....	152
7.1	Resistance Check	152
7.2	Program/Font ROM Location	156
8.	Parts List	160
Appendix A		181
Appendix B		185
1.	OUTLINE	185
1.1	Functions	185
1.2	External View and Component Names	185
2.	MECHANISM DESCRIPTION	186
2.1	General Mechanicms	186
2.2	Hopper Mechanism	187
3.	PARTS REPLACEMENT	188
3.1	Precautions Concerning Parts Replacement	188
3.2	Parts Layout	190
3.3	Parts Replacement Methods	191
3.3.1	Idle rollers	192
3.3.2	AOLT-PCB.....	193
3.3.3	Hopping motor	194
3.3.4	Feed roller	195
3.3.5	Hopping roller	196
3.3.6	Side frame (L) assy	197
3.3.7	Side frame (R) assy	198
4.	TROUBLESHOOTING	199
4.1	Precautions Prior to the Troubleshooting	199
4.2	Preparations for the Troubleshooting	199
4.3	Troubleshooting Method	200
4.3.1	LCD Status Message List	200
4.3.2	Troubleshooting Flow	201
5.	CONNECTION DIAGRAM	202
5.1	Interconnection Diagram	202
5.2	PCB Layout	203
6.	PARTS LIST	204

1. SPECIFICATIONS

1.1 Basic System Configuration

The basic system configuration of OKIPAGE 8c is illustrated in Figure 1.1.

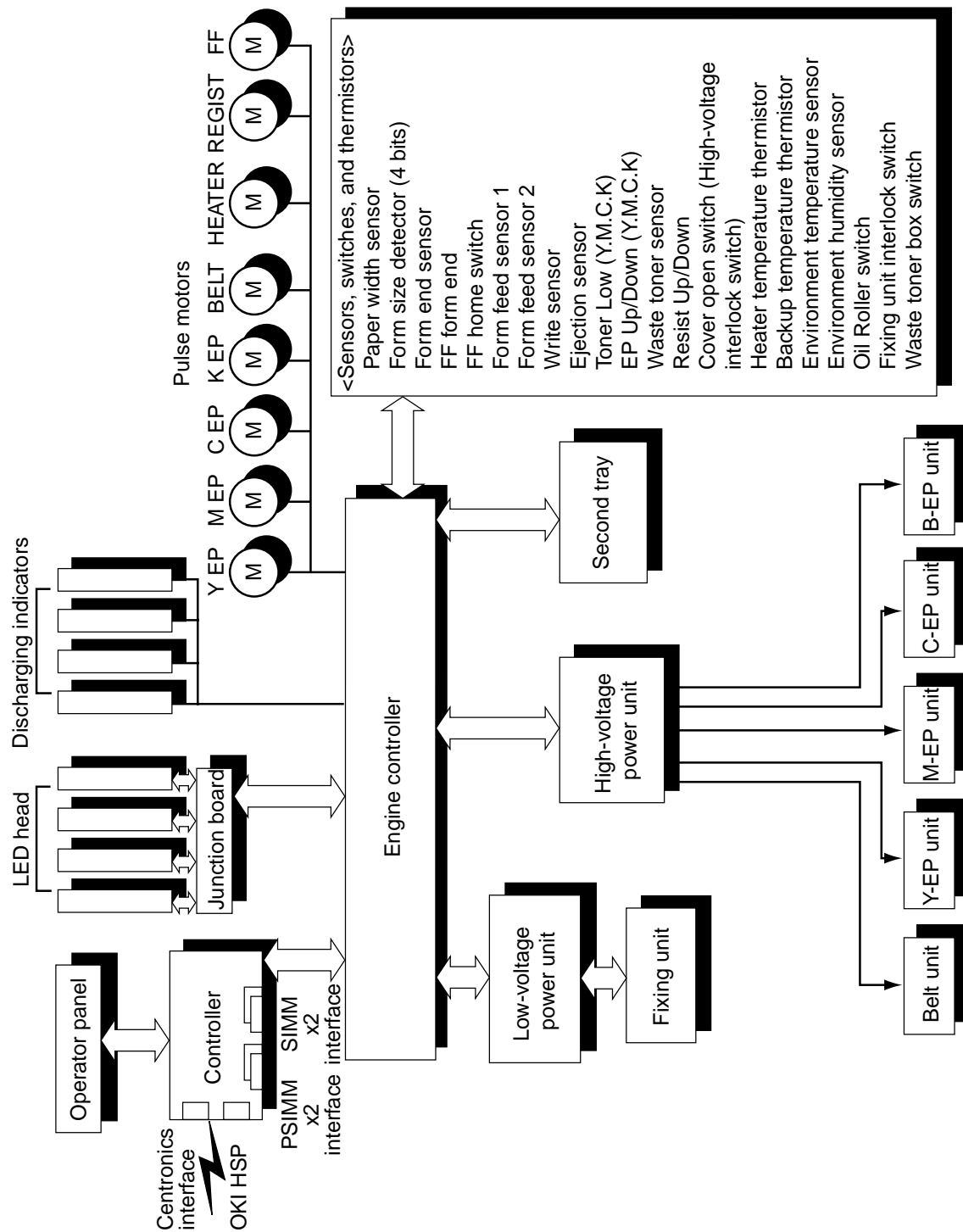


Figure 1.1

1.2 Printer Specifications

This printer unit is composed with the following hardware.

- Electro-photographic processor
- Paper feeder
- Controller (CU part / PU Part)
- Operator panel
- Power board (High voltage part / PU part)

Figure 1-2 show the printer unit configuration.

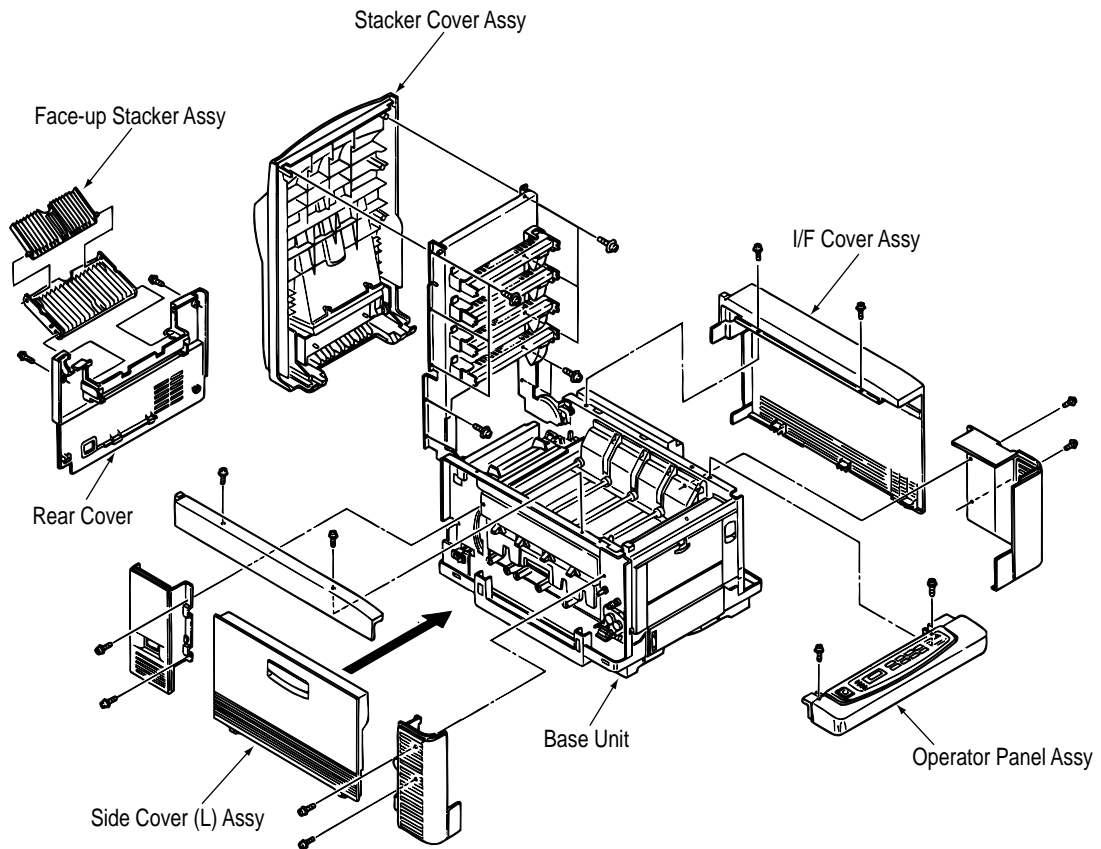
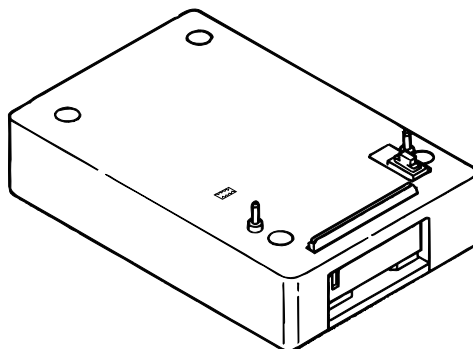


Figure 1.2

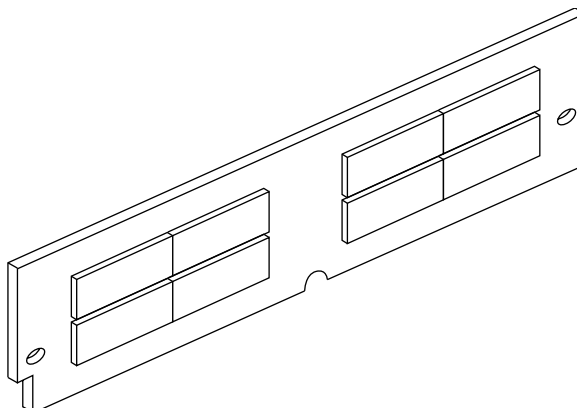
1.3 Option Specifications

Options available for OKIPAGE 8c are as follows.

- (1) 2nd-Feeder



- (2) RAM SIMM module (72 pin SIMM, 4MB/8MB/16MB/32MB)
 - * Make sure to use a set of 2 of the same volume size modules.



1.4 Basic Specifications

- (1) Dimensions
Width: 18.8" (478mm) Length: 24.5" (622mm) Height: 15.6" (396mm)
- (2) Weight
Approx. 48kg (106lbs)
- (3) Form
Type: Ordinary paper (Hammermill 24lbs) and OHP (Only CG3710)
Recommended paper (for color printing)
Color laser paper (20lb to 24lbs)
Note: The printout color tones are dependent upon the whiteness of the print paper
Sizes: Letter, Legal (13" or 14"), Executive, A4, A5, B5, and A6 (1st tray and front feeder)
Reams: 1st tray 20lbs to 28lbs
 2nd tray 20lbs to 28lbs
 Front feeder 20lbs to 44lbs
- (5) Printing speed
8 pages per minute (5 pages per minute: OHP/ 34lbs ~44lbs, 123g/m²~166g/m²)
- (6) Resolution
600 dots per inch x 600 dots per inch
- (7) Input voltage
120VAC +5.5%, -15%
230VAC ±10%
- (8) Power consumption
Peak: Typical operation
Idle: Power-save mode
- (9) Frequency
50Hz or 60Hz +2%, -2%
- (10) Noises
Operating: 54dB (without 2nd tray), 55dB (with 2nd tray)
Standby: 45dB
Power-saving: 43dB
- (11) Expendibles and service life
Toner cartridge: Approx. 1800 pages (5% duty) (each of Y, M, C, and K)
(Approx. 1000 sheets for the first)
Image drum: Up to 12,000 pages (5% duty, continuous) (each of Y, M, C, and K)
Waste Toner Box: Up to 25,000 Sheets
(under typical printout conditions: Single images of 5% density,
equivalent to printout using 14 toner cartridges)
Oil Roller Unit: Up to 10,000 sheets (Life defined in the number of actually printed
paper sheets)
- (12) Periodically-replaced parts
Heat Unit Assy: 60,000 pages
Belt Cassette Assy: 50,000 pages

(13) Temperatures and relative humidities

Temperature

Temperature conditions

	Temperature (in _F)	Temperature (in _C)	Remarks
Operating	50 to 89.6	10 to 32	17_C to 27_C (for assurance of full-color printout quality)
Non-operating	32 to 109.4	0 to 43	Power off
Storage (1 year max.)	14 to 109.4	-10 to 43	with drum and toner
Delivery (1 month max.)	-20 to 122	-29 to 50	without drum and toner and Belt Cassette Assy
Delivery (1 month max.)	-20 to 122	-29 to 50	with drum and toner

Humidity

Humidity condition

	Relative humidity (%)	Wet-bulb temperature	Remarks
Operating	20 to 80	25	50% to 70% (for assurance of full-color printout quality)
Non-operating	10 to 90	26.8	Power off
Storage	10 to 90	35	
Delivery	10 to 90	40	

for the packed unit only

(14) Printer life

3,000,000 (A4) pages or 5 years

2. OPERATION

OKIPAGE 8c is a tandem color electrophotographic page printer, using 4992-LED technologies, OPC, dry single-component non-magnetic developing, roller transfer, heat-compression fixing and so on. The printing method used is a Black Writing method which applies light beams to printout areas.

Figure 2.1 shows the functional block diagram of OKIPAGE 8c.

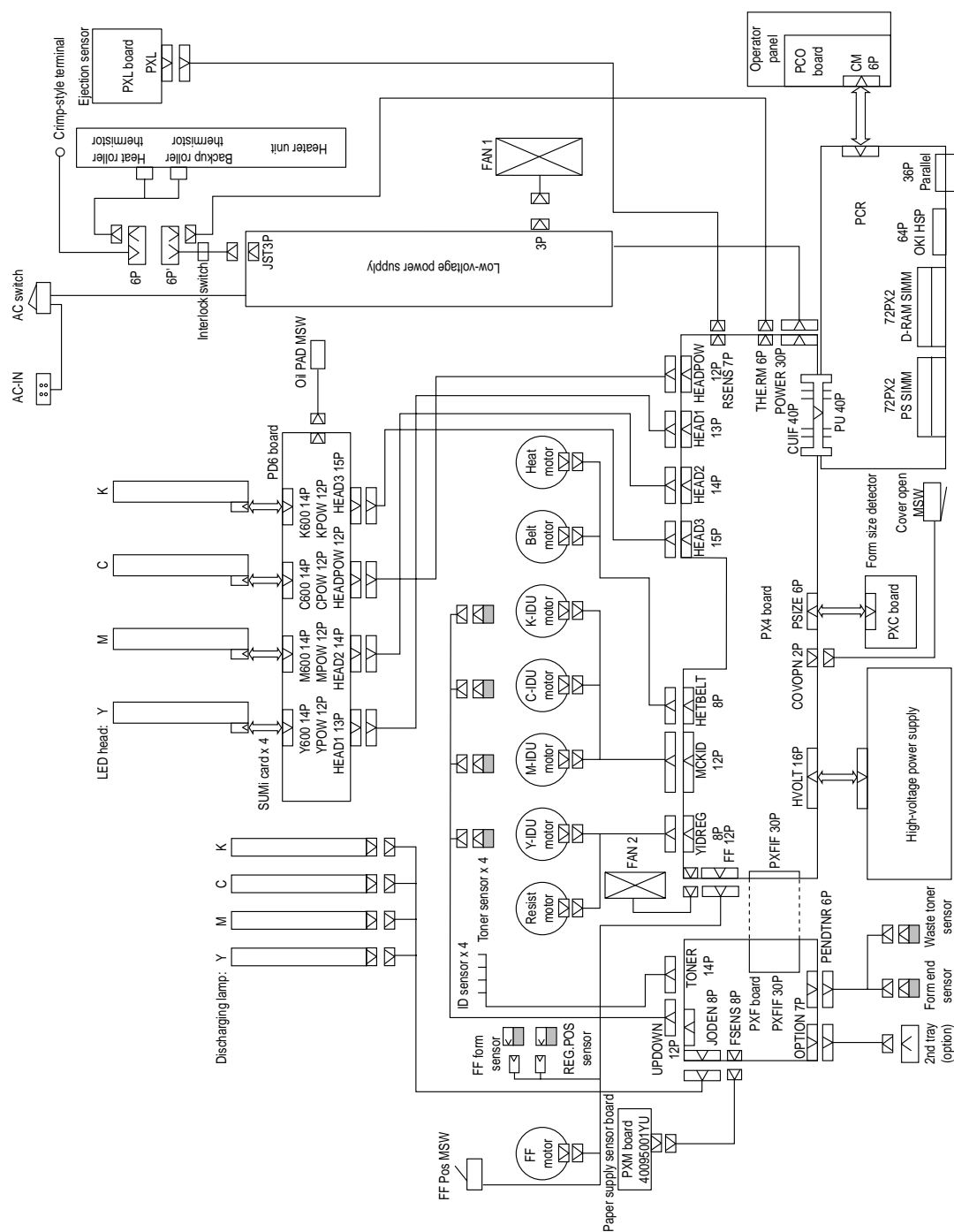


Figure 2.1

2.1 Main Control Board (PCR PCB)

The control board consists of a CPU (NR4700) block, a memory control LSI block, an interface control LSI block, a DRAM block, an EEPROM block, a mask ROM block, and an interface block. Figure 2.2 shows the functional block diagram of the main control board (PCR PCB).

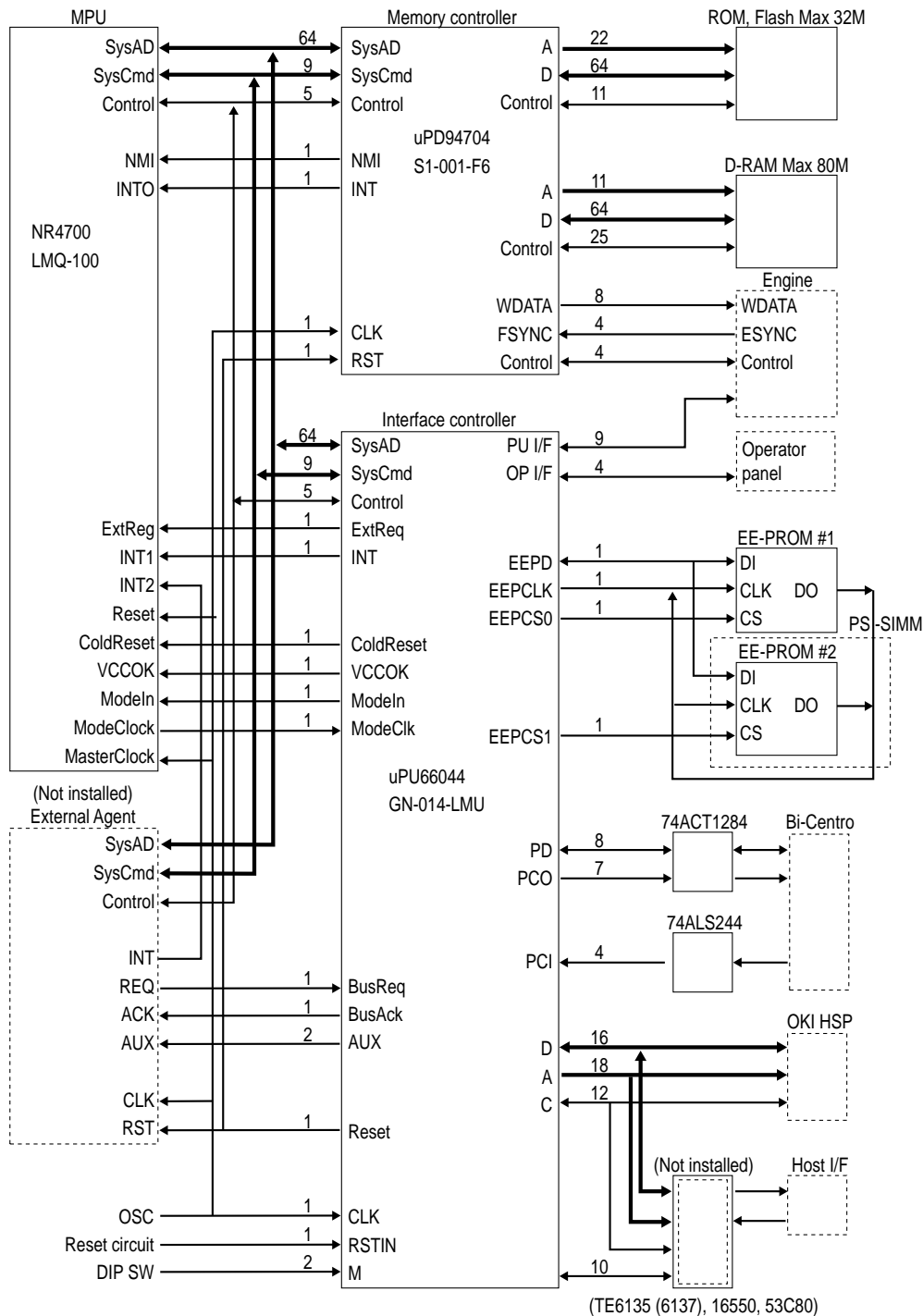


Figure 2.2

- (1) CPU
The CPU is a 64-bit RISC architecture processor (provided by NKK). It inputs a frequency of 50MHz and runs at 100MHz. It transfers data to and from memory at 50MHz.
- (2) Mask ROM
The mask ROM block consists of four 16Mbit (1M x 16bits) chips and its total size is 8M bytes. The chips are mounted on the PCR-PCB by means of IC sockets and store programs and character fonts.
- (3) DRAM
The DRAM block consists of eight 16Mbit (1M x 16bits) chips and its total size is 16M bytes. The chips are mounted on the PCR-PCB and can be expanded up to 80M bytes by adding the 32M byte SIMMs to the SIMM slots on the PCR-PCB.
- (4) EEPROM
The EEPROM block consists of 1K-bit chips mounted on a board by means of IC sockets and stores the following:
 - Menu data
 - Counter values
 - Adjustment values
- (5) Flash ROM
The Flash ROM block consists of four 4M bit (256K x 16bits) chips and its total size is 2M bytes. The chips are mounted on the PCR-PCB and are used for storing fonts, macro and demo pages.
- (6) Memory control LSI
This block mainly consists of memory control, CPU control, compression and decompression, and video interface functions.
- (7) Interface control LSI
This block mainly consists of PU interface control, operator panel interface control, EEPROM control, parallel interface control, and HSP control functions.
- (8) Host interface
This printer has the following interfaces to the host.
 - Centronics bidirectional parallel interface
 - OKI HSP interface (Option)

The single effective interface or the automatic interface select mode can be selected using the menu. If the busy state of the printer continues for a long time period, the buffer near-full control releases the busy status at constant intervals even if the host side is busy so as not to cause interface time-out at the host side.

(a) Centronics bidirectional parallel interface

This is an interface conforming to IEEE-1284 and provides either unidirectional and bidirectional communications according to each of the following communication modes.

- Compatibility mode
Unidirectional communications from the host to the printer.
- Nibble mode
This mode transfers 4-bit wide data from the printer to the host. In this mode, each bit of 1-byte data is transmits in the form of two nibbles using ERROR, BUSY, FAULT, and SELECT signal leads. This mode can provide bidirectional operation in combination with the compatibility mode.

- ECP mode
This mode provides the asynchronous bidirectional interface and transmits and receives 1-byte data using eight data signal leads under semi-duplex control by the host.

When the power is turned on, the compatibility mode is automatically selected. The change to another mode from the compatibility mode is made through negotiation. (When the BI DIRECTION is set to ENABLE in the menu, this change can be performed.) (For the electrical/physical characteristics of this interface, see APPENDIX B)

(b) OKI HSP interface (Option)

This interface (slot) is an OKI unique universal interface that provides the platform to connect various of boards (including those supplied by third vendors) such as the LAN connection expansion board and SCSI expansion board. Any expansion boards compatible with this interface can be mounted on the Control board in the piggyback board from without modifying the program at the printer side. The conceptual diagram of the OKI HSP interface is shown in Fig. 2-3.

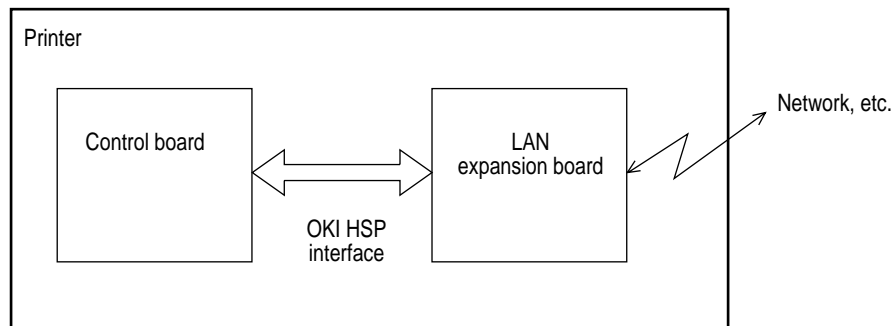
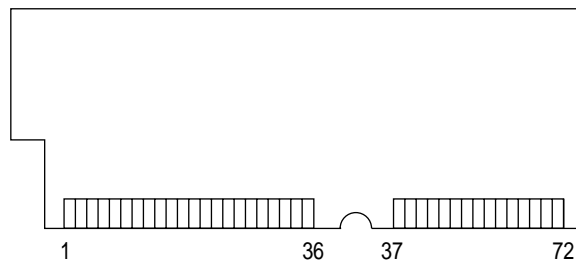


Figure 2.3

(For the electrical/physical characteristics of the OKI HSP interface, see the OKI HSP interface technical manual.)

(8) RAM module

- Pin layout



- Basic specification
 - Type: 72 pins SIMM (32 bits buss width)
 - Access time: 60ns, 70ns, 80ns
 - Capacity: 4, 8, 16 or 32MB
 - Parity: None

2.2 Engine Control Board (PX4 PCB)

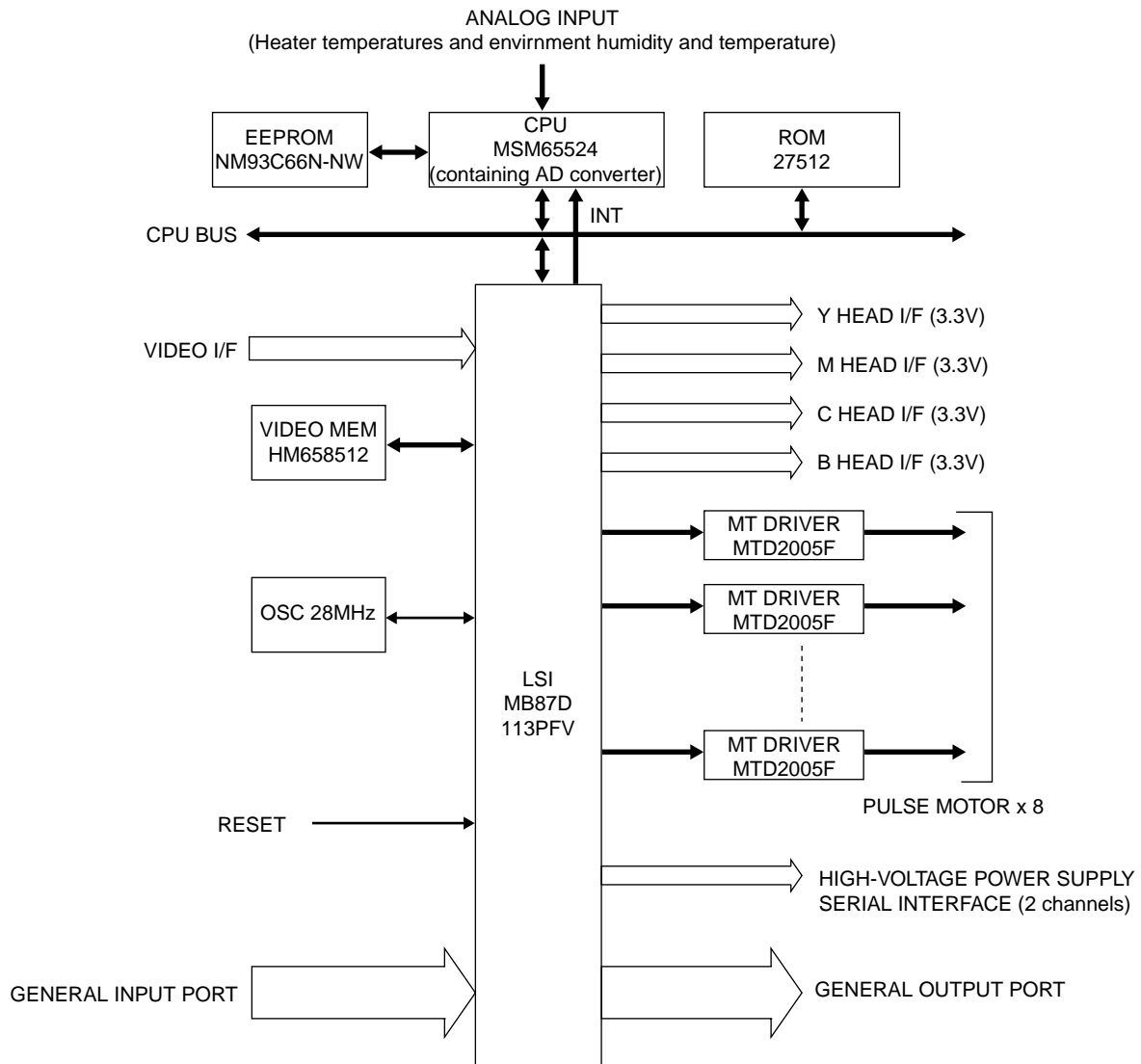


Figure 2.4

The engine control block (PU) is controlled by the engine control board (PX4 PCB) which consists of a CPU (MSM65524), general purpose LSI chips, EPROM, EEPROM, pulse motor drivers, and video memory. (See Figure 2.4.)

- (1) CPU
This is an 8-bit CPU (OKI MSM65524) containing the AD converter and controls the whole system.
- (2) General-purpose LSI
This LSI (MB87D113PFV) is provided in the printer engine control block and has controller-engine video interface, LED interface, motor control, sensor input, video memory control, main scanning color correction, skew correction, high-voltage power control, and OST-EX2 functions.

- (3) EPROM
This EPROM (27C512-150) has a storage capacity of 512K bits and stores programs for the PU block.
- (4) EEPROM
This EEPROM (NM93C66N-NW) having a storage capacity of 4K bits is mounted on the board by means of IC socket and stores adjustment values etc.
- (5) Pulse motor drivers
These drivers (MTD2005F) drive eight pulse motors for moving up and down the EP and transferring medium.
- (6) Video memory
This SRAM receives print data through video interface and stores it.

2.3 Power/Units

The power supply unit comprises of the low voltage power supply unit which consists of an AC filter circuit, low voltage power supply circuit and heater driver circuit, and the high voltage power supply unit.

(1) Low voltage power supply unit

This circuit generates the following voltages.

Output voltage	Use
+3.3 V	CU Unit CPU, LED HEAD
+5 V	Logic circuit supply voltage
+32 V	Motor and fan drive voltage and source voltage for high-voltage supply, discharge lamp
+12 V	HSP, OP Amp, high voltage power supply
-12 V	HSP

(2) High voltage power supply unit

This circuit generates the following voltages necessary for electro-photographic processing from +32 V in accordance with the control sequence from the control board. When cover open state is detected, +32 V supply is automatically interrupted to stop the supply of all the high-voltage outputs.

Output	Voltage	Use	Remarks
CH	-1.35 KV \pm 50V	Voltage applied to charging roller	
DB	Normal paper Y. M. C : -250V/+300V, -232V/+300V(First paper. Y only) K : -275V/+300V Transparency Y. M. C. : -200V/+300V, K. : -250V/+300V	Voltage applied to developing roller	
SB	Y. M. C.K : -650V/0V	Voltage applied to toner supply roller	
TR	0 to 4 KV	Voltage applied to transfer roller	Variable
FIX	0 to 2.5 KV	Voltage applied to transfer roller	Variable

2.4 Mechanical Processes

Figure 2.5 shows the mechanical processes of OKIPAGE 8c.

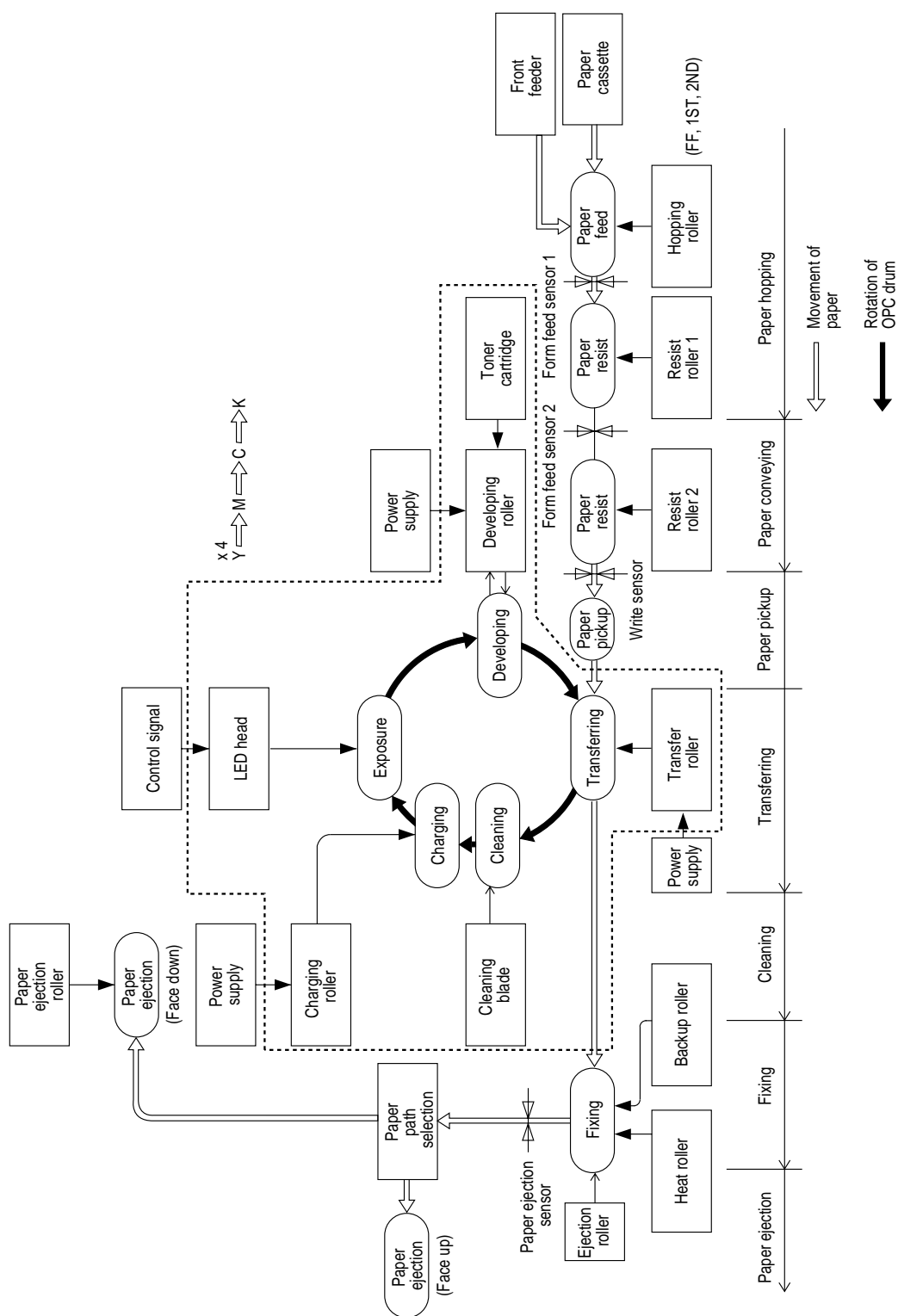


Figure 2.5

2.4.1 Electrophotographic processing mechanism

(1) Electrophotographic processes

Each process of the electrophotographic processing mechanism is outlined below.

① Paper pickup

This process causes the roller to give a DC voltage to the paper to have a negative charge. With this negative charge, the paper is electrostatically attracted to the roller.

② Charging

This process gives a DC voltage to the CH roller so that the OPC drum may have a uniform negative charge on its surface.

③ Exposure

This process causes the LED head to apply light beams according to image signals to the negatively-charged surface of the OPC drum. The negative charge on the illuminated surface of the OPC drum is reduced according to magnitudes of the light beams.

Thus, a latent image is formed on the surface of the OPC drum according to the resulting surface potentials.

④ Developing and recovery of excessive toner

This process applies negatively-charged toner to the surface of the OPC drum. The toner is electrostatically attracted to the latent image to form a visible image on the surface of the OPC drum. Simultaneously, this process electrostatically transfers excessive toner from the OPC drum to the developing roller.

⑤ Transferring

This process fits paper to the surface of the OPC drum, applies positive charge (opposite to the charge of the toner) to the back side of the paper from the transfer roller. The toner image is transferred to the paper.

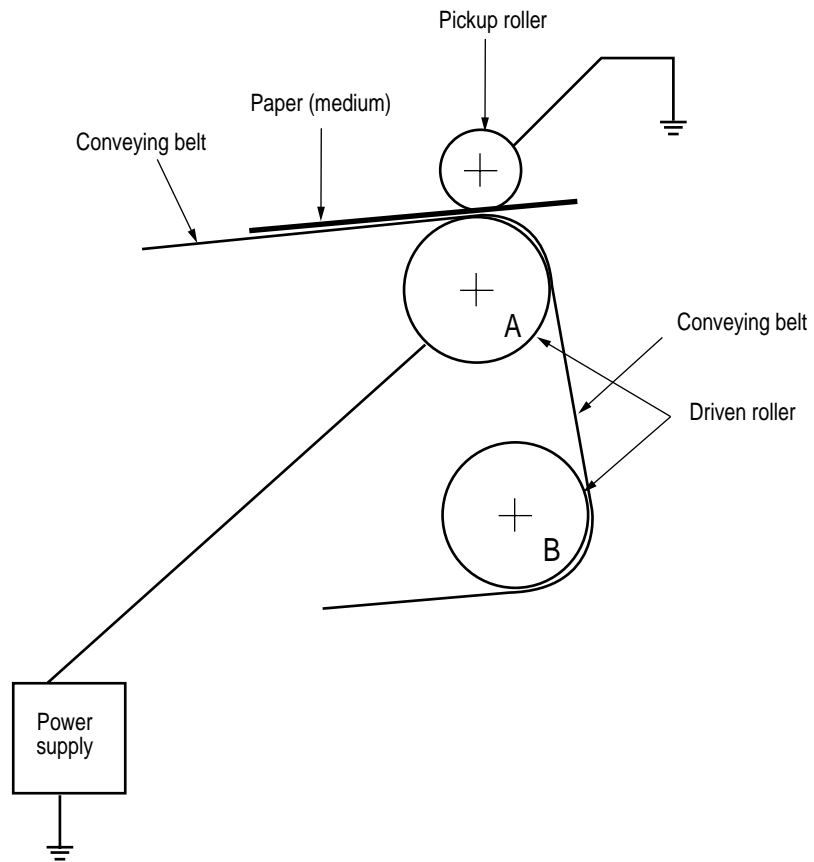
⑥ Cleaning

Cleaning blade scrapes off the remaining toner from the OPC drum which has been used to transfer.

⑦ Fixing

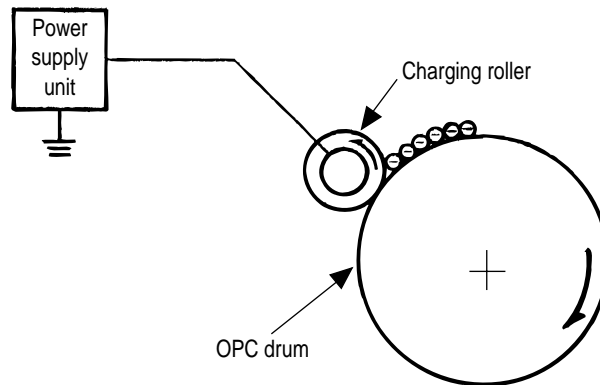
This process fixes the toner image on the paper by pressing and fusing the image.

(2) Paper pickup

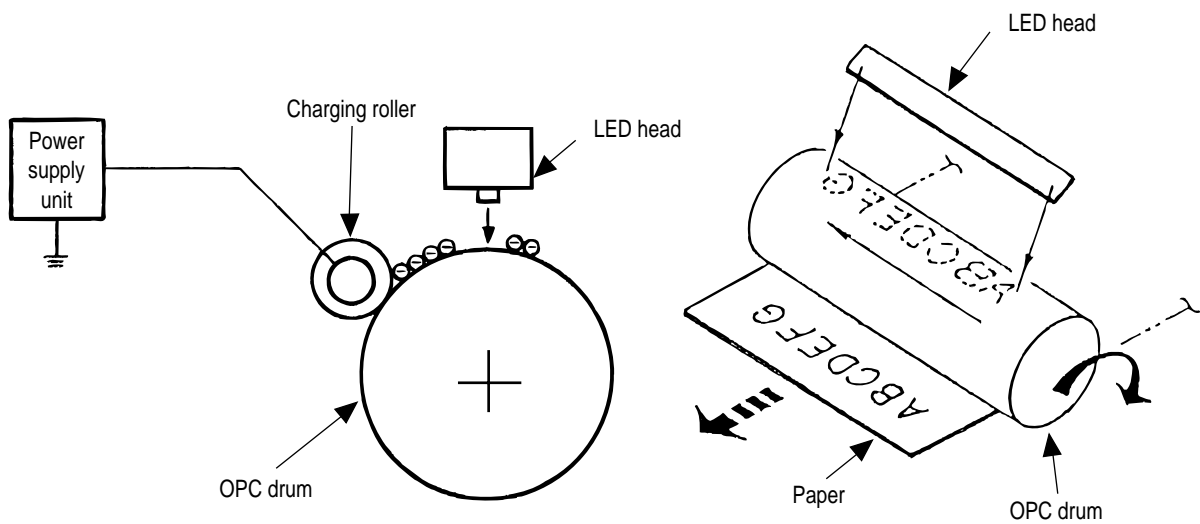


A DC voltage (0V to 2KV) is applied to the driven roller A to positive charge the lower surface of the paper. The negatively-charged paper is electrostatically attracted to the pickup roller. With this, the paper is in close-contact with the conveying Belt and conveyed steadily.

- (3) Charging
This process applies a DC voltage to the charging roller in contact with the surface of the OPC drum.



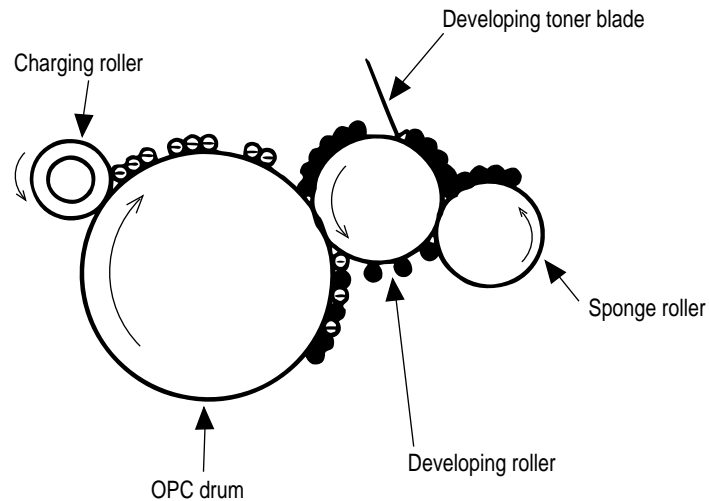
- (4) Exposure
The light beams from the LED head are applied to the surface of the OPC drum which is charged negatively. The negative charge on the illuminated surface of the OPC drum is reduced according to magnitudes of the light beams and a latent image is formed on the surface of the OPC drum according to the resulting surface potentials.



(5) Developing

This process applies toner to the latent image on the surface of the drum to convey it into a toner image. Developing is carried out on the surface of the OPC drum at which the OPC drum is in contact with the developing roller.

- ① The sponge roller transfers toner to the developing roller. The toner is charged negatively.



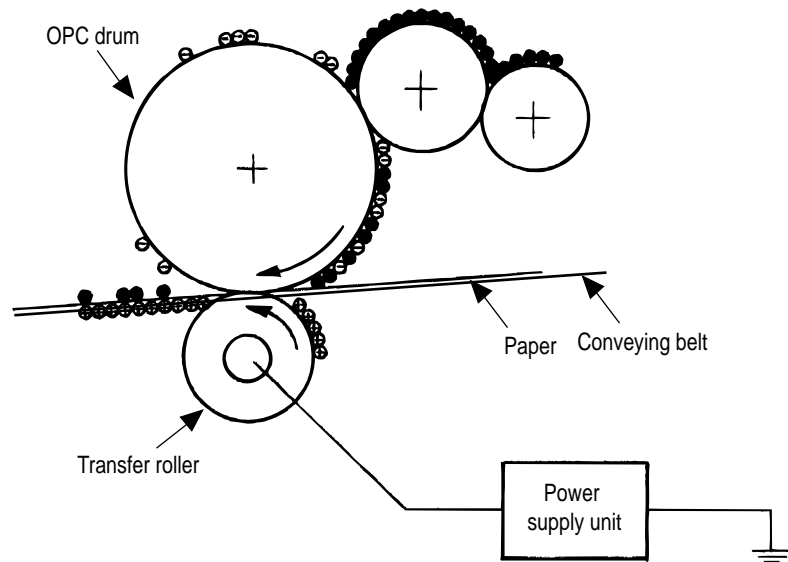
- ② The toner blade scrapes away excessive toner on the developing roller to form a thin film of toner on the surface of the developing roller.
- ③ The toner is attracted to the latent image on the surface of the OPC drum at which the OPC drum is in contact with the developing roller. The latent image on the surface of the OPC drum is made visible with the toner.

(6) Transferring

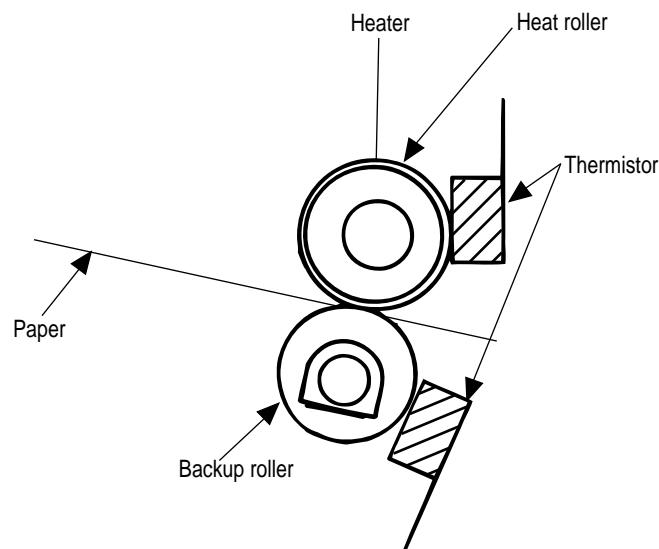
The transfer roller made of conductive sponge presses the paper against the surface of the OPC drum so that the paper may be in close contact with the surface of the OPC drum.

This process fits the paper to the surface of the OPC drum by the transfer roller and applies positive charge (opposite to the charge of the toner) from under the paper.

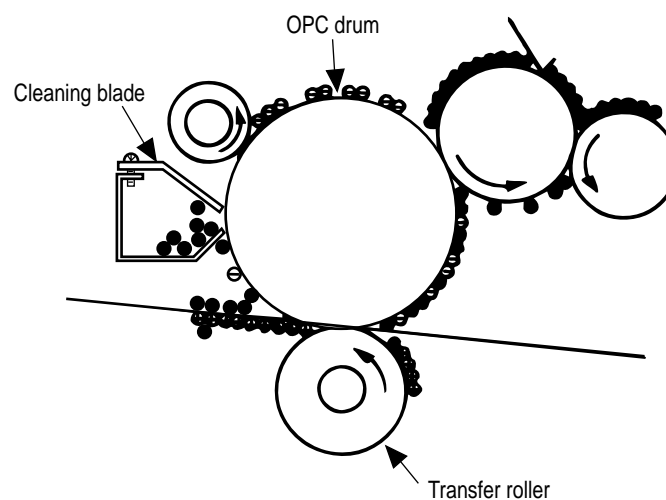
When a positive high voltage is applied to the transfer roller from the power supply, the positive charge induced on the transfer roller jumps to the upper surface of the paper at which the transfer roller touches the paper and attracts the negatively-charged toner from the surface of the OPC drum onto the surface of the paper.



- (7) Fixing The toner image just transferred to the paper is fused and fixed to the paper while the paper is passing through the gap between the heat roller and the backup roller. The teflon-coated surface of the heat roller is heated up by the 800-watt heater (or a halogen lamp) provided in the heat roller. The temperature of the heat roller surface is controlled by a thermistor in contact with the surface of the heat roller. A thermostat is provided for safety. When the heat roller temperature goes higher than the preset temperature, the thermostat opens and shut off power to the heater in the heat roller. The backup roller is evenly pushed against the heat roller by two end springs.



- (8) Cleaning
The toner which remains on the OPC Drum without being fused is scraped by a cleaning blade and discarded in the waste toner tank.



2.4.2 Paper running process

Figure 2.6 shows how paper moves in the OKIPAGE 8c.

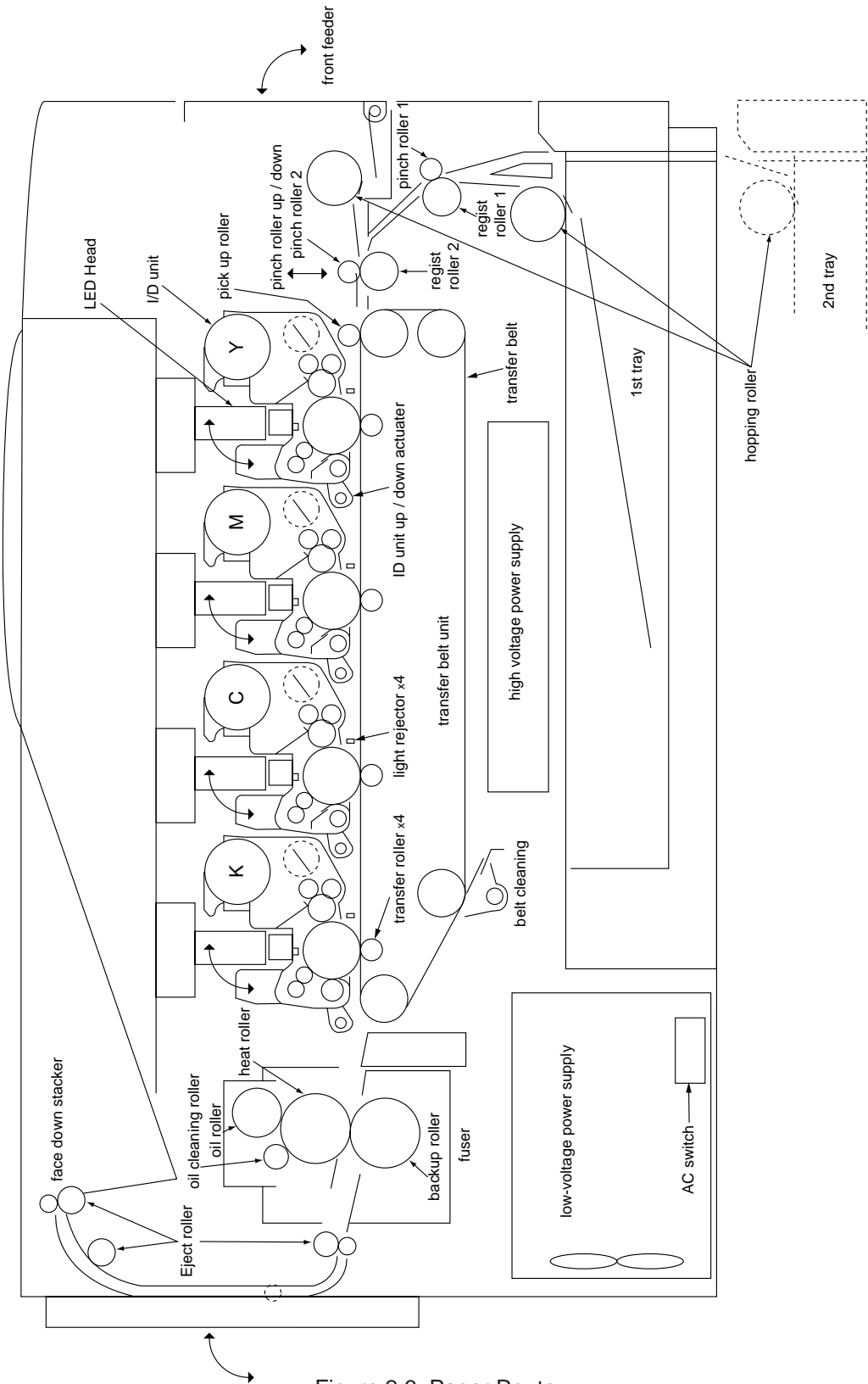
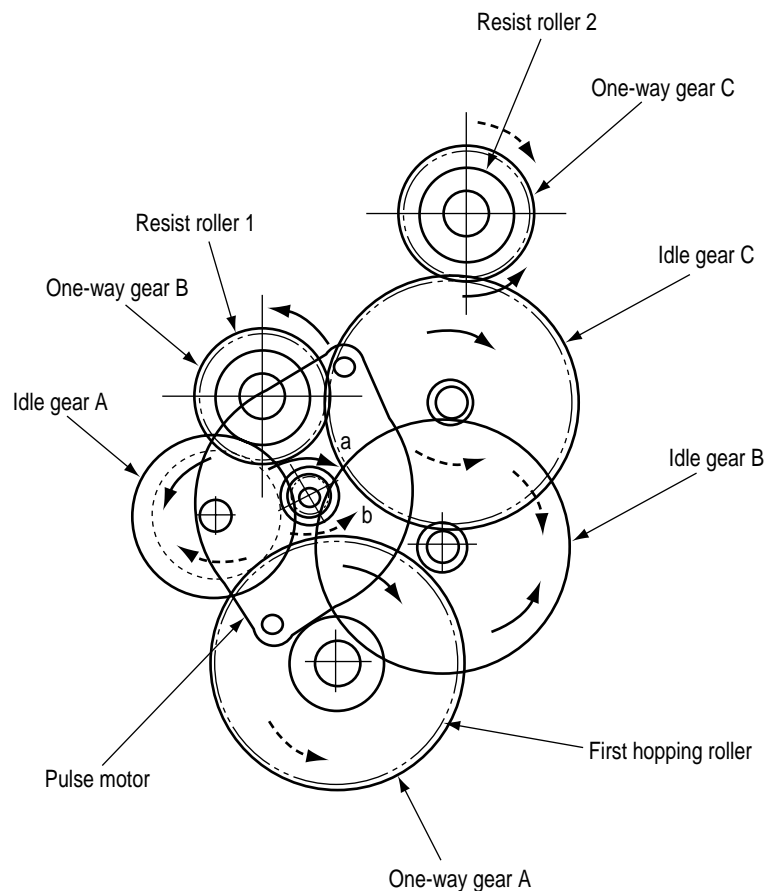


Figure 2.6 Paper Route

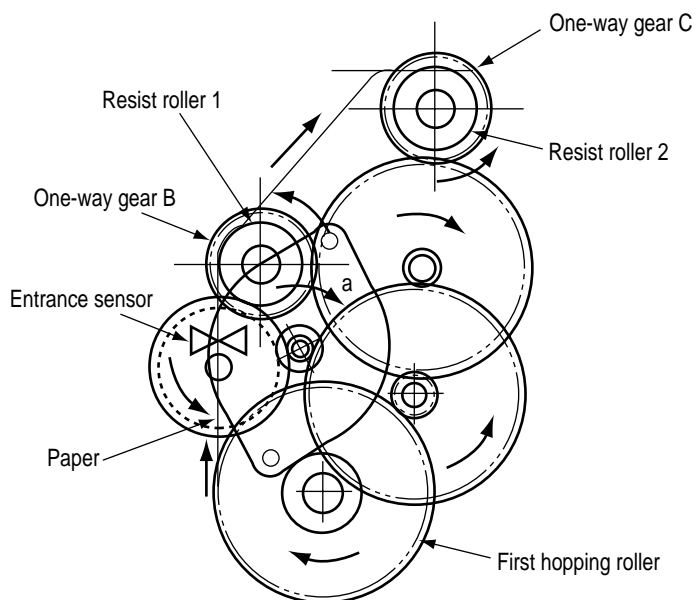
- (1) Paper hopping and transfer and up/down movement of pinch roller 2
 Paper is hopped and delivered by the mechanism shown below. This mechanism is driven by a single pulse motor.



The pulse motor turns in the arrow direction (a) and drives the hopping roller in the direction of "b." The hopping roller drives the resist roller. Each of the one-way clutch gears A, B, and C has a one-way clutch to prevent the rollers from rotating reversely.

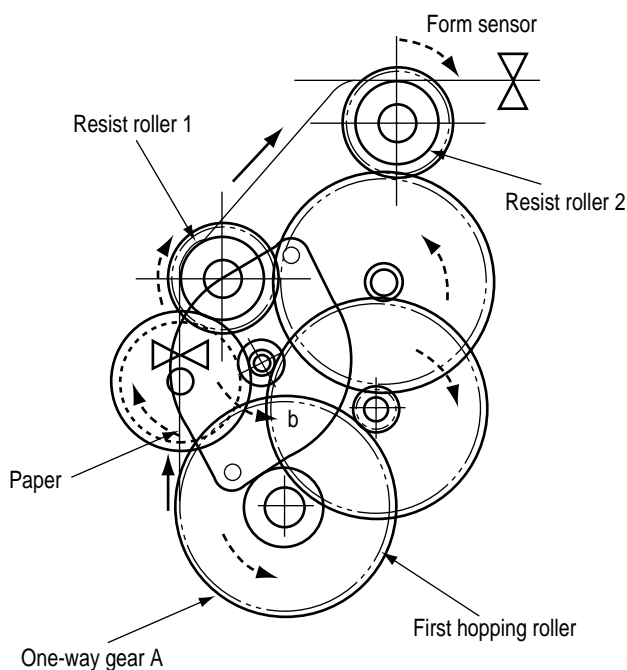
(a) Hopping

- ① The pulse motor turns in the arrow direction of “a” (counterclockwise) and drives the hopping roller to move the paper until the Entrance sensor turns on. Although the one-way gears B and C are also driven, the resist roller 2 does not turn because the reverse rotations of the one-way clutch gears are not transmitted to the resist roller.
- ② After the Entrance sensor turns on, the hopping roller keeps on feeding the paper until it hit the resist roller 1. (This operation corrects any paper skew.)

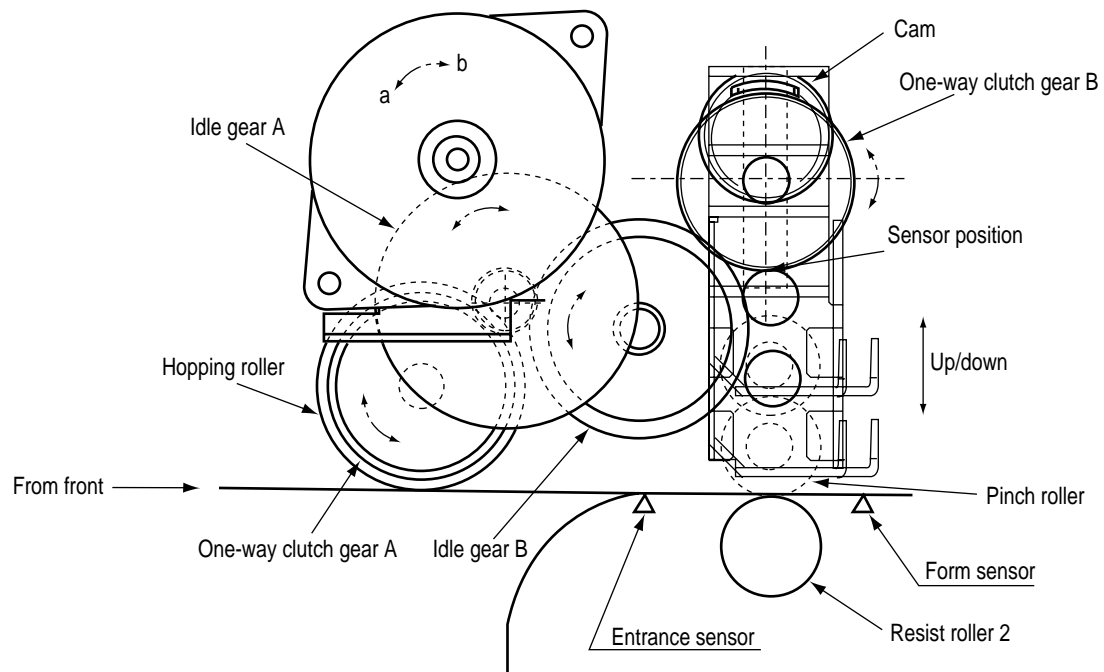


(b) Conveying

- ① After paper hopping is completed, the pulse motor turns right (in the direction of “b”) to drive the resist rollers 1 and 2. The resist rollers feed the paper until the Form sensor turns on. Although the one-way gear A is also driven, the hopping roller does not turn because of the one-way clutch.
- ② The paper is further fed in synchronism with the print data.



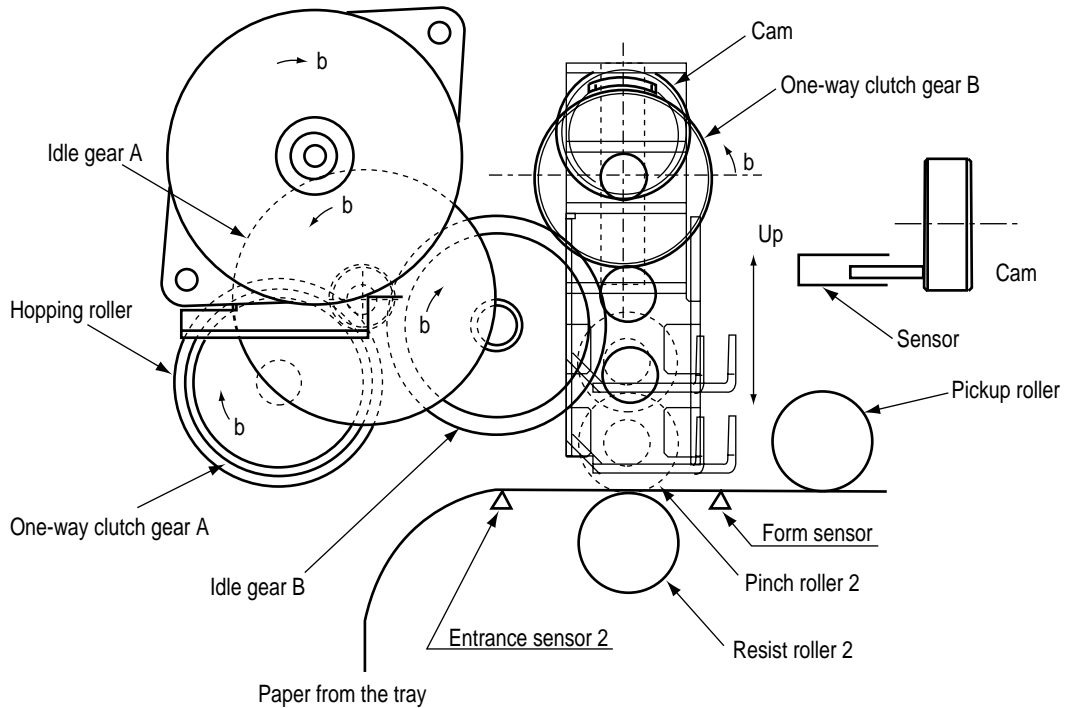
- (2) The hopping operation of the front feeder and the up/down operation of the pinch roller 2 are performed by a single pulse motor, as shown below.



When the pulse motor of the front feeder turns right (in the direction of "A"), the front hopping roller turns left (in the direction of "b") to drive the cam. This cam moves up and down the pinch roller 2. The one-way clutch gears are made to turn only in a preset direction by means of the one-way clutches.

(a) First and second hopping rollers

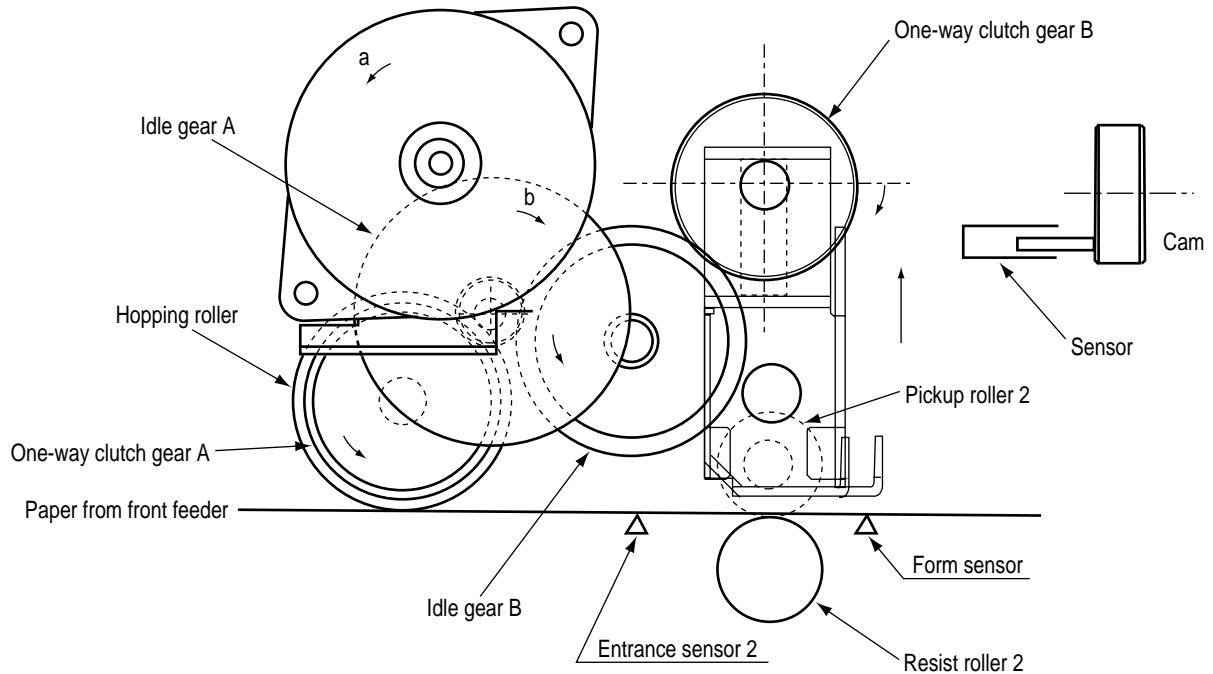
- ① When the front edge of the paper passes by the pickup roller, the pulse motor of the front feeder turns left (in the direction of "b") to drive the cam. The cam moves up the pinch roller 2. Although the one-way clutch gear A is also rotating, the hopping roller of the front feeder does not rotate by means of the one-way clutch.
- ② When the rear edge of the paper passes by the Entrance sensor 2, the pulse motor of the front feeder turns left (in the direction of "b") to drive the cam. The cam moves down the pinch roller 2 until it is sensed by the sensor. Although the one-way clutch gear A is also rotating, the hopping roller of the front feeder does not rotate by means of the one-way clutch.



(b) Front feeder hopping

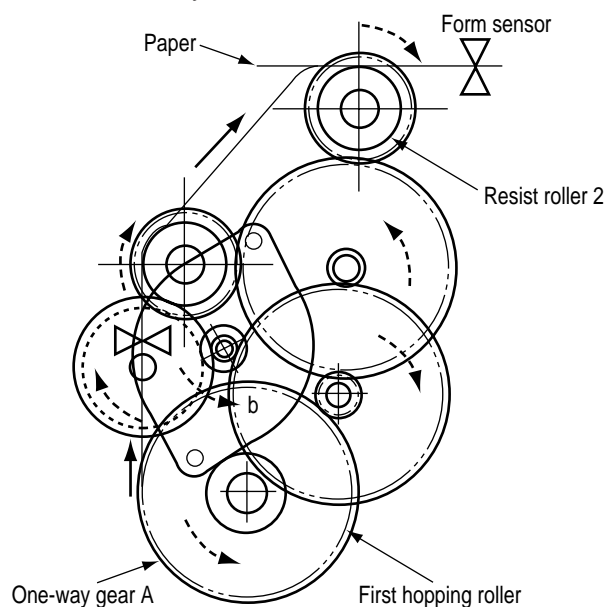
- ① The pulse motor of the front feeder turns right (in the direction of "a" to drive the hopping roller. The paper is fed until the Entrance sensor 2 turns on. Although the one-way clutch gear B is also rotating, the pinch roller 2 does not drive the up/down cam by means of the one-way clutch.

After turning on the Entrance sensor, the paper is further fed until it hits the resist roller 2. (This operation corrects any paper skew.)



(c) Conveying

- ① After paper hopping is completed, the pulse motor turns right (in the direction of "b") to drive the resist rollers 1 and 2. The resist rollers feed the paper until the Form sensor turns on.
- ② Although the one-way gear A is also driven, the first hopping roller does not turn because of the one-way clutch.



- (2) Up/down movement of the I/D unit and rotation of the EP drum
 The up/down movement of the I/D unit and the rotation of the EP drum are performed by a mechanism shown below. (See Figure 2.6-a) This mechanism is driven by a single pulse motor.
 When the pulse motor turns left (CCW), the up/down gear turns left (in the direction of “a”) and the up/down lever (see Figure 2.6-b) moves up (in the direction of “ α ”). The up/down lever pushes up the up/down actuator of the I/O unit. The I/D unit moves up as shown in Figure 2.6-b. The EP drum rotates freely.

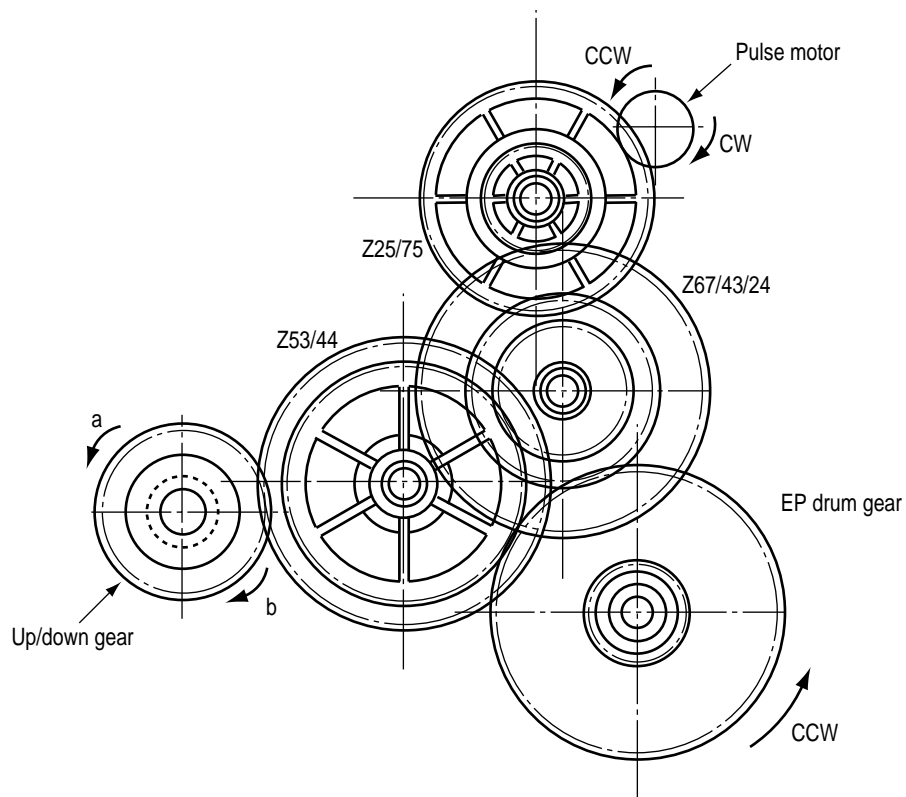


Figure 2.6-a

When the pulse motor (see Figure 2.6-a) turns right (CW), the EP drum gear turns left (CCW) and the up/down gear (one-way gear) is released. The weight of the I/D unit is applied to the up/down lever via the up/down actuator of the I/O unit. The free up/down gear turns right (in the direction “b” in Figure 2.6-a) and the I/D unit goes down until the up/down actuator of the I/D unit is stopped by the up/down lever. (See Figure 2.6-c.) During this, the image is transferred onto the running paper.

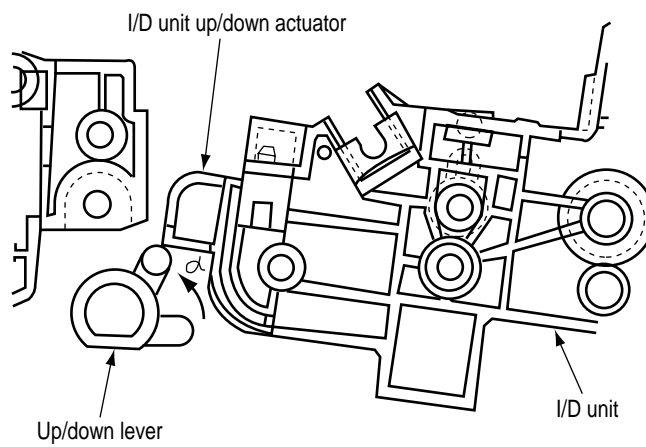


Figure 2.6-b

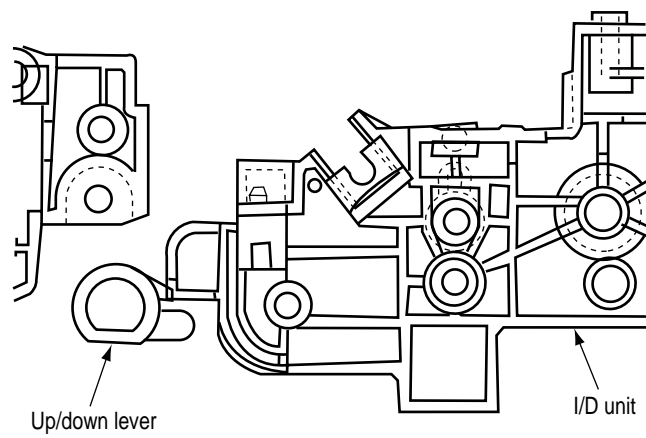
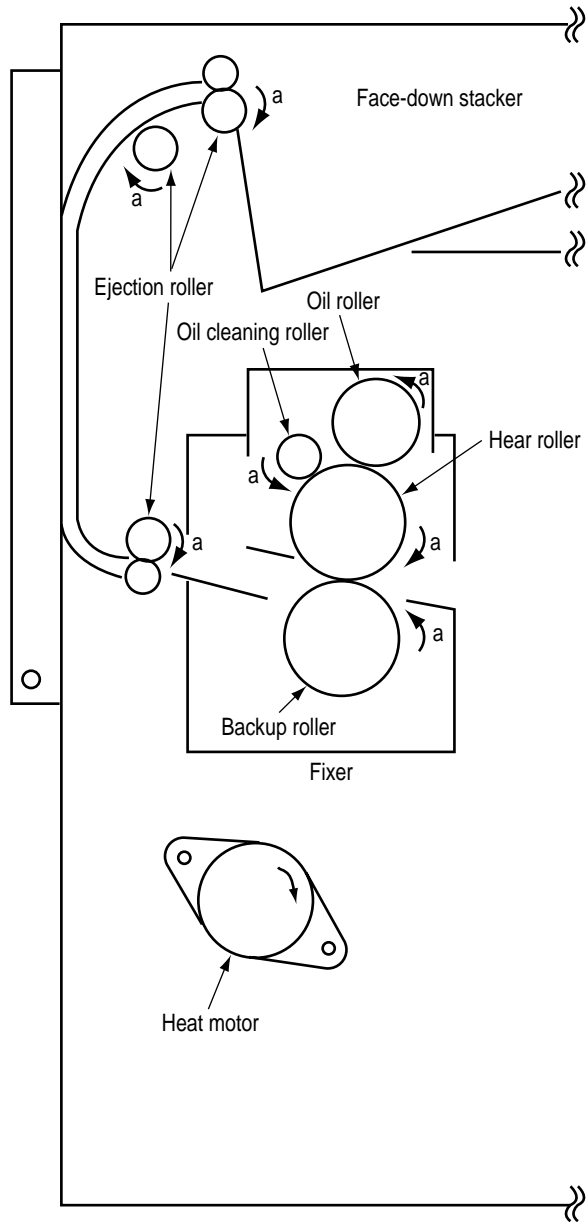


Figure 2.6-c

(3) Lubrication and cleaning of fixing, ejecting, and heat rollers



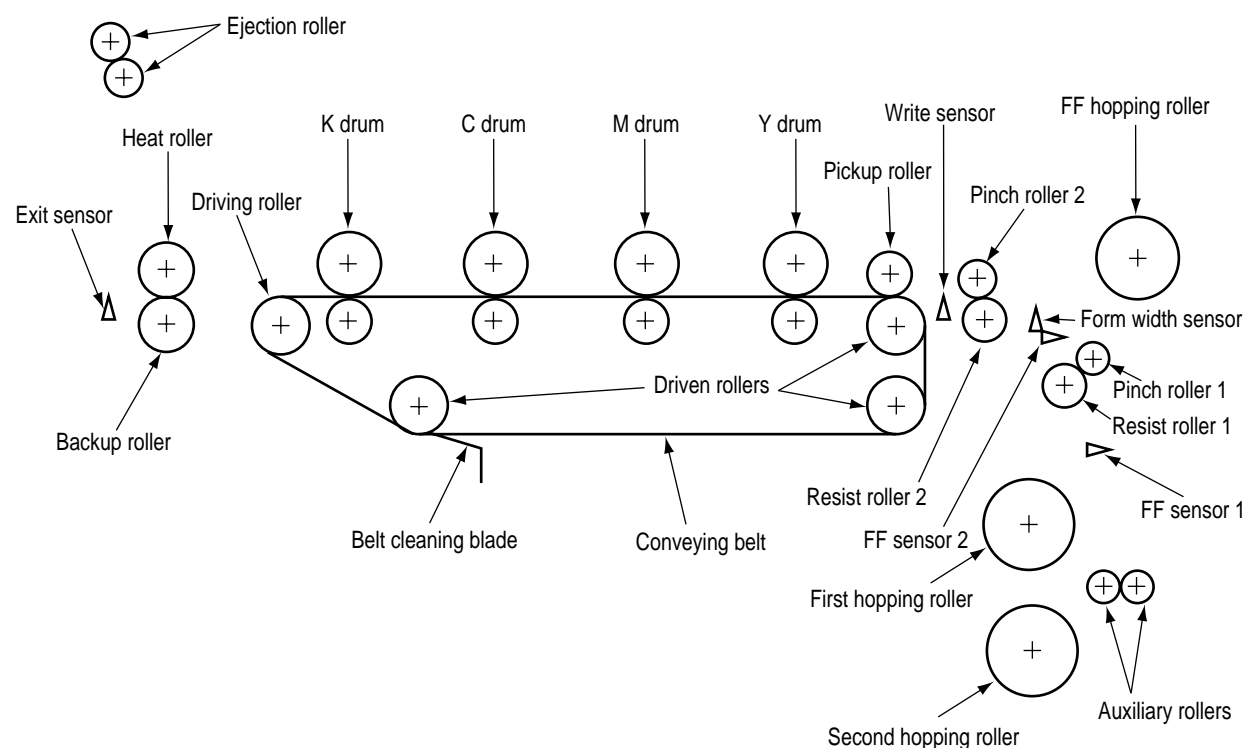
The fixing roller, the ejecting roller, and the heat roller are lubricated and cleaned by a single pulse motor.

When the heat roller pulse motor turns right (in the direction of "a"), the heat roller and the backup roller turn left (in the direction of "a") to fix a toner image onto the paper.

At the same time, three ejection rollers turn right (in the direction of "a") to eject the paper. The oil roller and the oil cleaning roller turn left (in the direction of "a") to supply oil to the surface of the heat roller and clean the surface.

2.5 Sensors

2.5.1 Paper related sensors



Sensor	Function	Sensor status
FF sensor 1/2 (Entrance sensor 1/2)	Detects the front edge of an incoming paper and determines timing to change from hopping to conveying.	ON: Front edge detected OFF: Front edge not detected
Form width sensor	Senses the width of the paper sheet.	ON: A4 size or bigger OFF: Smaller than A4 size
Write sensor	Detects the front edge of the conveyed paper sheet and determines the length of the paper sheet from elapsed time before the front edge of the paper reaches the sensor.	ON: Form present OFF: Form absent
Ejection sensor	Detects the front and rear edges of a paper sheet and determines whether the paper is ejected.	ON: Form present OFF: Form ejected

2.5.2 Other sensors

- ① Form end sensor
This sensor checks whether the paper cassette is empty.
- ② FF form end sensor
This sensor checks whether the front feeder has paper.
- ③ FF home switch
This microswitch checks whether the front feeder stage is in the up or down position.
- ④ EP up/down sensor (one for each color Y, M, C, K)
This sensor checks whether the I/D unit is in the up or down position.
- ⑤ Waste toner sensor
This sensor judges whether the waste toner cartridge is full by measuring a time period at which the sensor lever turns on periodically. When the time period falls under a preset value, the system judges that the waste toner cartridge is full and displays the “waste toner full” message.
- ⑥ Resist up/down sensor
This sensor detects the up or down position of the resist roller 2.
- ⑦ Temperature sensor
Refer to 2.8 (Transfer Control according to Environmental Changes).
- ⑧ Humidity sensor
Refer to 2.8 (Transfer Control according to Environmental Changes).

2.6 Correction of Color Deviation

OKIPAGE 8c is equipped with an array of I/D units which cannot be from generation of color deviations. This mechanically caused color deviation is corrected electronically as shown below.

- (1) Color deviations to be corrected
 - ① Color deviation in the X axis (Positional error of the LED head)
 - ② Diagonal color deviation (Positional error of the LED head)
 - ③ Color deviation in the Y axis (Positional errors of the I/D units and light receivers)
- (2) Method of correction Print out the preset color chart, compare the printed color chart by the original color chart, and enter the amount of color deviation of each color from the operator panel or from the host computer. OKIPAGE 8c calculates correction values from the entered values and changes the write timing of each color (cyan, magenta, and yellow) relative to black.

2.7 Transfer Control according to Environmental Changes (Room Temperatures and Relative Humidities)

OKIPAGE 8c measures the room temperature and humidity by the room temperature sensor and the room humidity sensor, calculates an optimum transfer voltage according to the obtained environmental conditions and realtime-controls printing with the optimum transfer voltage.

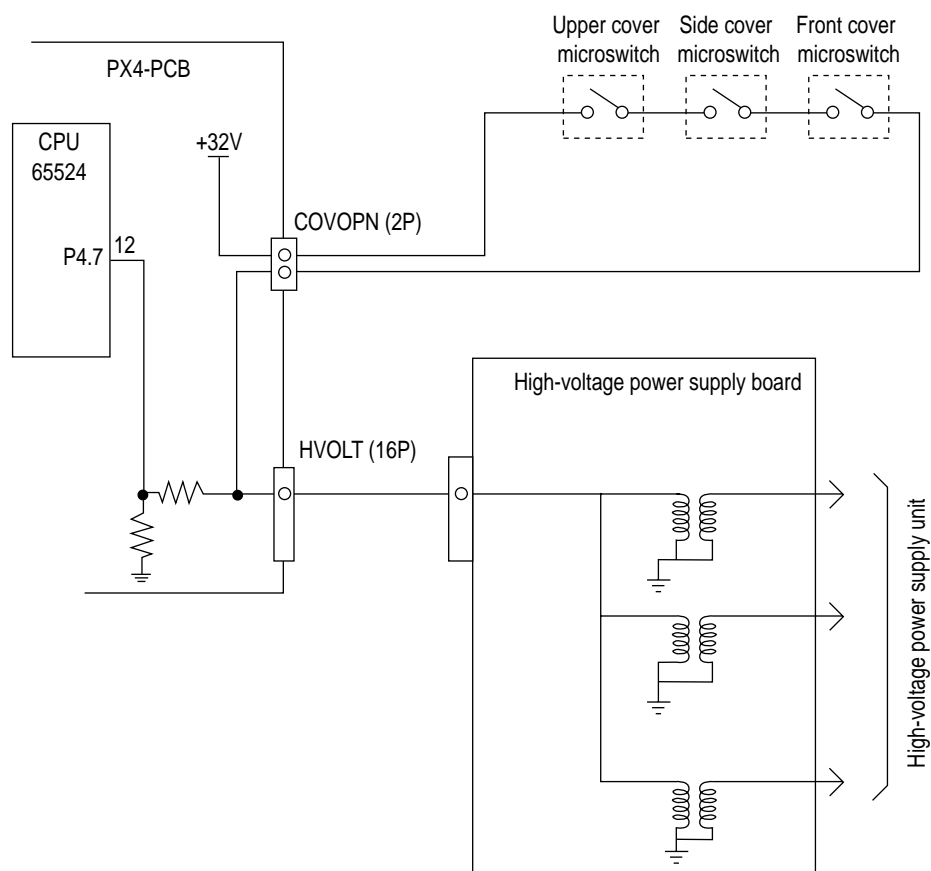
2.8 Form Jam Detection

OKIPAGE 8c checks for a paper jam when the page printer is powered on and during printing. When finding a paper jam, OKIPAGE 8c immediately stops the printing process. To recover the printer, open the cover, find and remove the jammed paper, then close the cover.

Error	Conditions
Form feed jam	Three hopping operations are made, but the Form Feed sensor (Entrance) does not turn on a preset time after the Form Feed sensor 1 turns on.
Convey jam	The ejection sensor does not turn on a preset time period after the Write sensor detects the front end of paper.
Ejection jam	The ejection sensor detected the front edge of the paper but does not detect the rear edge of the paper for a preset time period.
Form size error	The form size obtained by measuring the time period before the rear edge of the paper passes by the Form Feed sensor 2 after the front edge of the paper passed the Write sensor is longer by 45mm than the specified form length.

2.9 Cover Opening

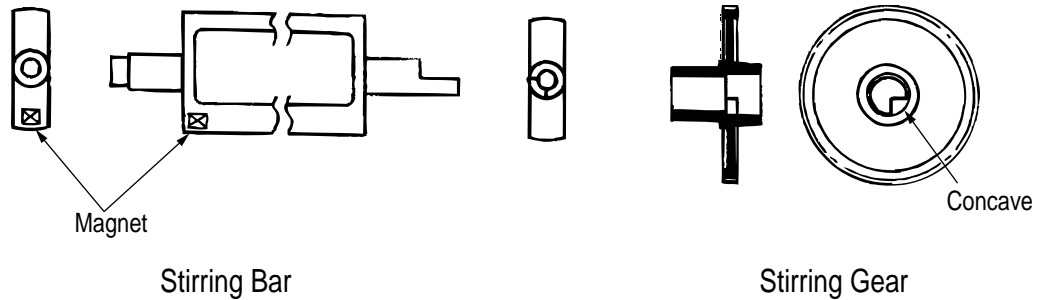
When the upper, side, or front cover of OKIPAGE 8c is opened, the Cover Open microswitch turns off, a voltage of 32V to the high-voltage power supply is shut off, and all high-voltage outputs are shut off. At the same time, the CPU receives a signal (CVOPN) indicating the status of the microswitch and performs the cover open process.



2.10 Toner Low Detection

- Composition

The device consists of the stirring gear which rotates at a constant rate, the stirring bar and the magnet on the stirring bar. The stirring bar rotates through the engagement of concave in the stirring gear.

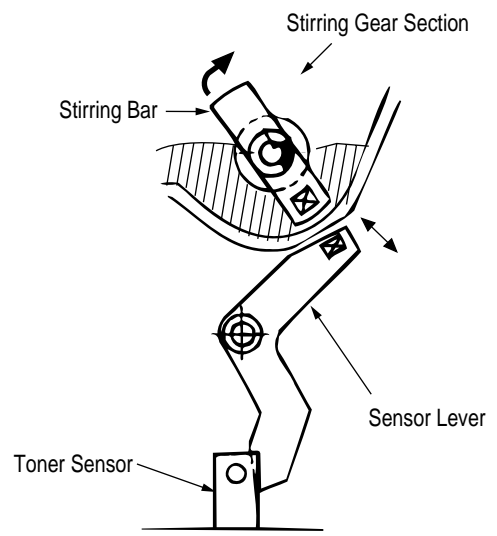


- Operation

Toner Low is detected by monitoring the time interval of the encounter of the magnet set on the sensor lever and the magnet on the stirring bar.

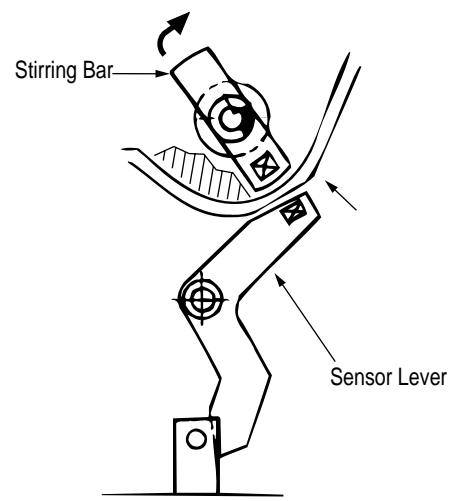
Operation during toner full state

- The stirring bar rotates due to the interlocking with the stirring gear.
- Even when the magnet on the stirring bar reaches the maximum height, since the other side is being dipped in the toner, the stirring bar is pushed by the stirring gear.

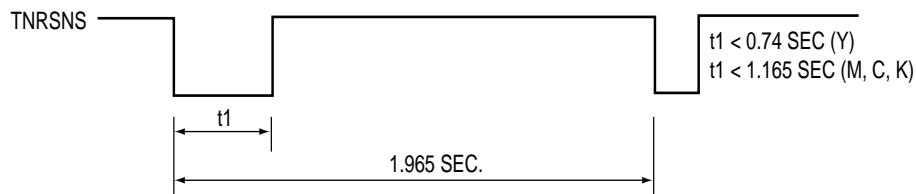


Operation during toner low state

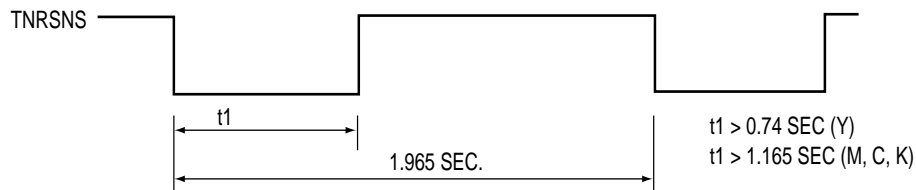
- When the stirring bar reaches the maximum height, since there is no resistance provided by the toner on the other side, it falls to the minimum height due to its own weight. Because of this, the time interval during which it is in encounter with the magnet of the sensor lever becomes long. By monitoring this time interval, toner low can be detected.



TONER FULL state



TONER LOW state



- When the toner low state is detected for 2 times consecutively, Toner Low is established.
- When the toner full state is detected for 2 times consecutively, Toner Low is cancelled.
- When there is no change with the toner sensor for 2 cycles (1.965 sec. x 2) or more, then the Toner Sensor Alarm is activated.
- The toner sensor is not monitored while the drum motor is in halt.

2.11 Page Size Detection

The four tab pieces are driven according to the setting position of the paper guide through the cam interlocked with the paper guide of the paper cassette.

When the paper cassette is inserted into the printer, the state of the tab pieces is detected by the microswitch to recognize the paper size.

State of Microswitches				Paper size
SW1	SW2	SW3	SW4	
0	1	1	1	Letter
0	1	0	1	Executive
0	0	1	1	A4
1	1	1	0	Legal 14
1	0	1	1	Legal 13
1	1	0	1	B5
1	1	0	0	A5
1	0	0	1	A6

2.12 Power-on Processing

2.12.1 Self-diagnostic test

- (1) Initial test
The following checks are automatically performed when the OKIPAGE 8c page printer is powered on:
 - (a) ROM check
 - (b) RAM check
 - (c) EEPROM check
 - (d) Flash ROM check
- (2) ROM check
 - (a) Checks ROM by comparing the sum of bits in the received data unit by the number of bits in the transferred data unit.
- (3) RAM check
 - (a) Checks RAM by writing a preset data pattern in RAM, reading the contents of RAM, and comparing the data read from RAM by the data written in RAM. (Write-read test)
 - (b) Checks optional RAM if it is installed.
 - (c) Checks resident RAM by exclusively ORing high and low addresses (to prepare 16-bit data units), writing a preset 16-bit data pattern in RAM, reading the contents of RAM, and comparing the data read from RAM by the data written in RAM. Checks optional RAM by writing and reading 32-bit fixed patterns ("5555h" and "aaaah") in optional RAM.
- (4) EEPROM check
 - (a) Checks ID numbers stored in the fixed addresses of EEPROM.
 - (b) Checks the content of the menu area by control firmware and the engine area by engine firmware.
- (5) Flash ROM check
Checks Flash ROM by writing a present data pattern in Flash ROM, reading the contents of Flash ROM, and comparing the data read from Flash ROM by the data written in Flash ROM. (Write-read test).
- (6) Option unit check
Checks whether the optional units (such as the second tray, PS SIMM, and so on) have been installed before entering the operation mode.

3. PARTS REPLACEMENT

The section explains the procedures for replacement of parts, assemblies, and units in the field. Only the removal procedures are explained here. Reverse the procedure for the installation.

3.1 Precautions for Parts Replacement

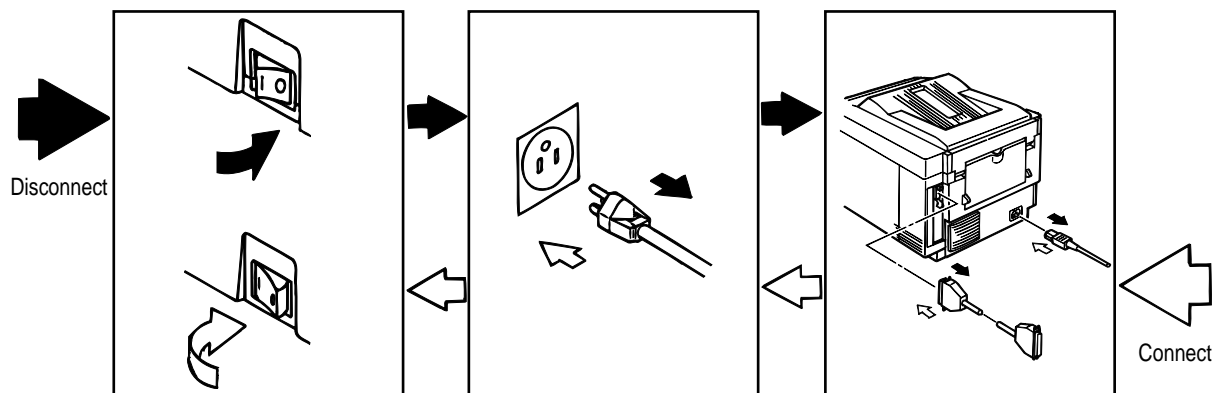
(1) Before starting parts replacement, remove the AC cable and interface cable.

(a) Remove the AC cable in the following procedure:

- i) Turn off ("o") the power switch of the printer
- ii) Disconnect the AC inlet plug of the AC cable from the AC receptacle.
- iii) Disconnect the AC cable and interface cable from the printer.

(b) Reconnect the printer in the following procedure.

- i) Connect the AC cable and interface cable to the printer.
- ii) Connect the AC inlet plug to the AC receptacle.
- iii) Turn on ("I") the power switch of the printer.



(2) Do not try disassembly as long as the printer is operating normally.

(3) Do not remove unnecessary parts: try to keep disassembly to a minimum.

(4) Use specified service tools.

(5) When disassembling, follow the determined sequence. Otherwise, parts may be damaged.

(6) Since screws, collars and other small parts are likely to be lost, they should temporarily be attached to the original positions.










(7) When handling ICs such as microprocessors, ROM and RAM, and circuit boards, do not wear gloves that are likely to generate static electricity.

(8) Do not place printed circuit boards directly on the equipment or floor.

[Service Tools]

Table 3-1 shows the tools required for field replacement of printed circuit boards and units.

Table 3-1 Service Tools

No.	Service Tools		Q' ty	Place of use	Remarks
1		No. 1-100 Philips screwdriver	1	2~2.5 mm screws	
2		No. 2-200 Philips screwdriver, Magnetized	1	3~5 mm screws	
3		No. 3-100 screwdriver	1		
4		No. 5-200 screwdriver	1		
5		Digital multimeter	1		
6		Pliers	1		
7		Handy cleaner	1		
8		LED Head cleaner P/N 4PB4083-2248P1	1	Cleans LED head	
9		Tweezers	1		

3.2 Parts Layout

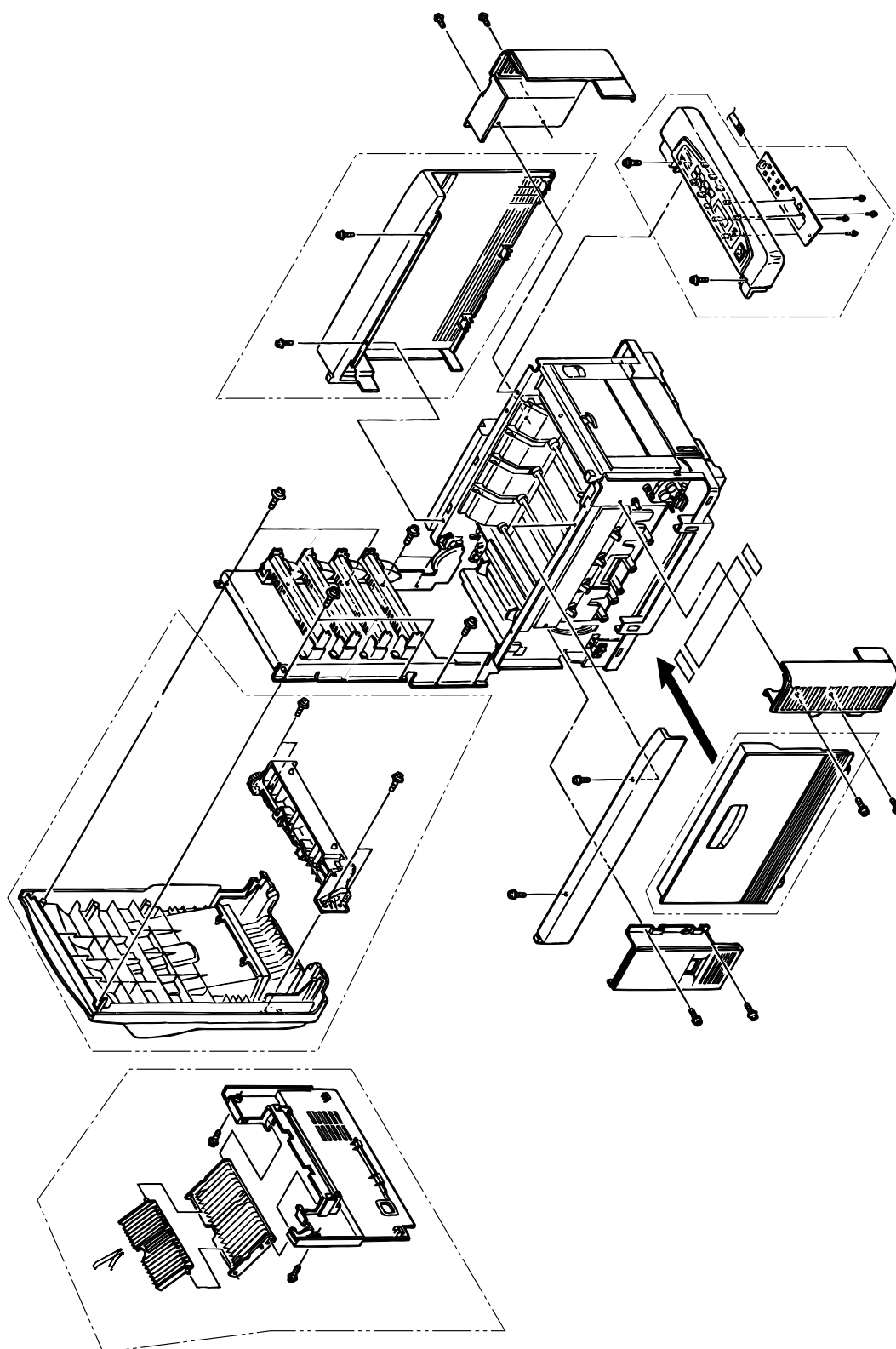


Figure 3-1

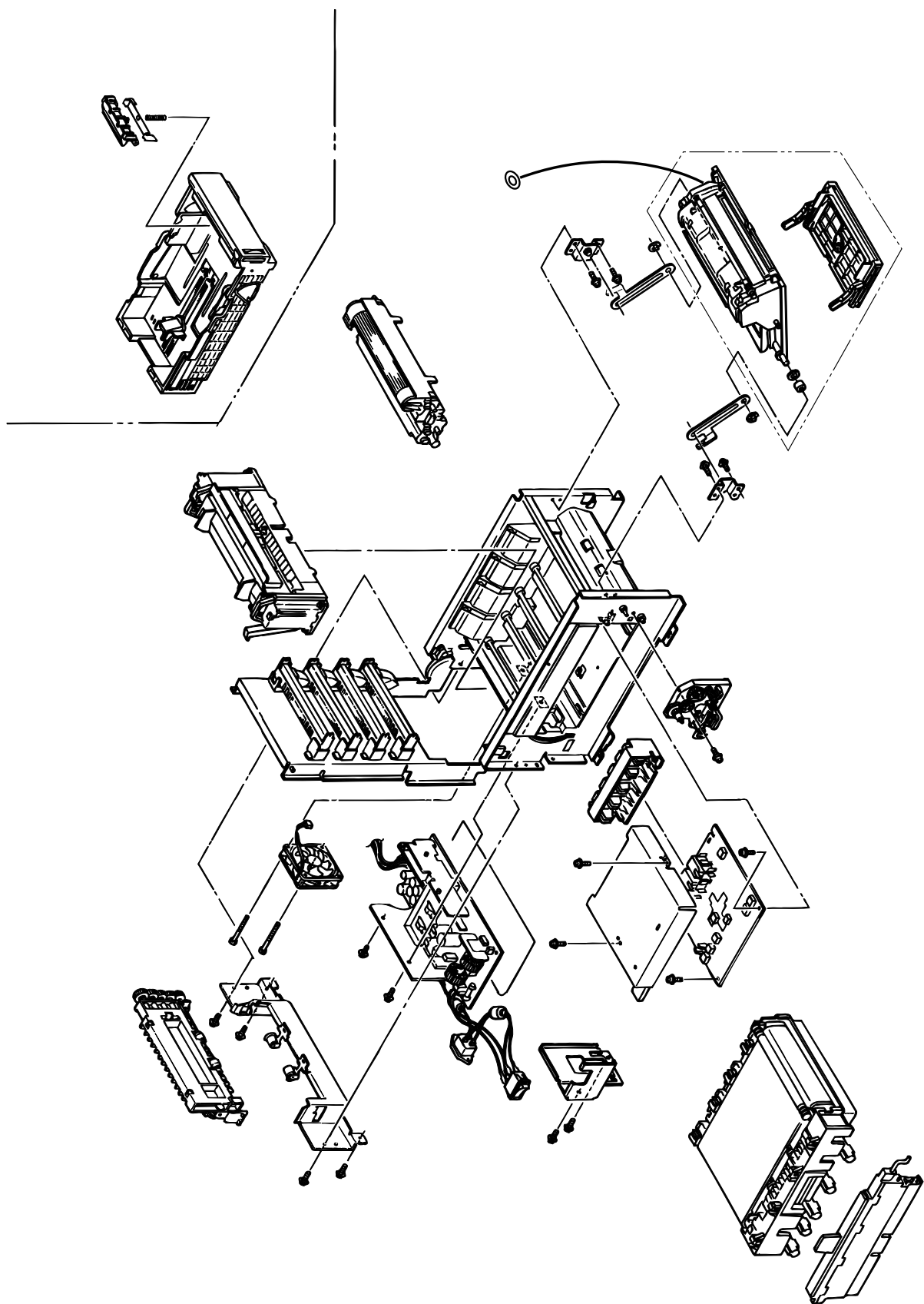


Figure 3-2

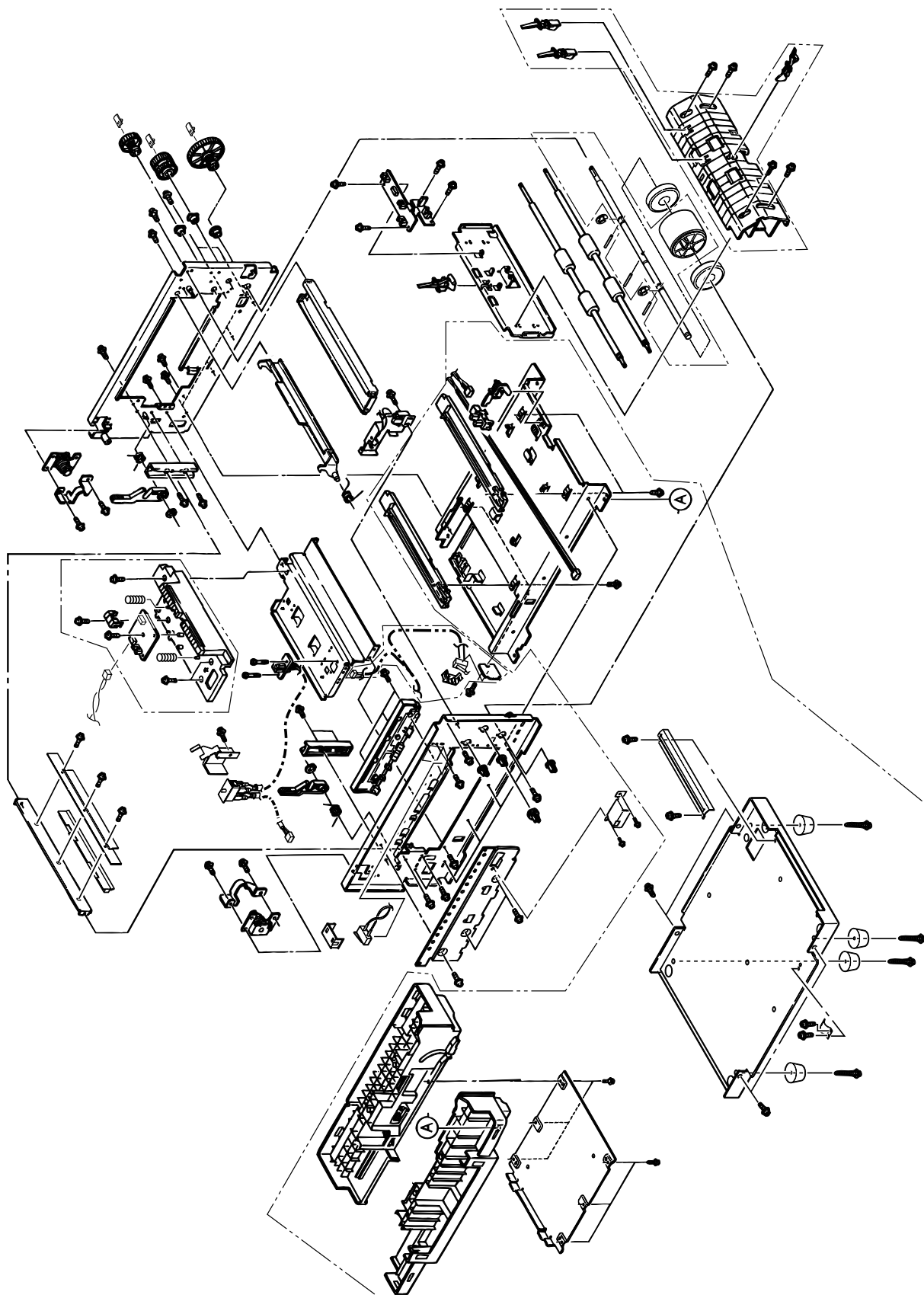


Figure 3-3

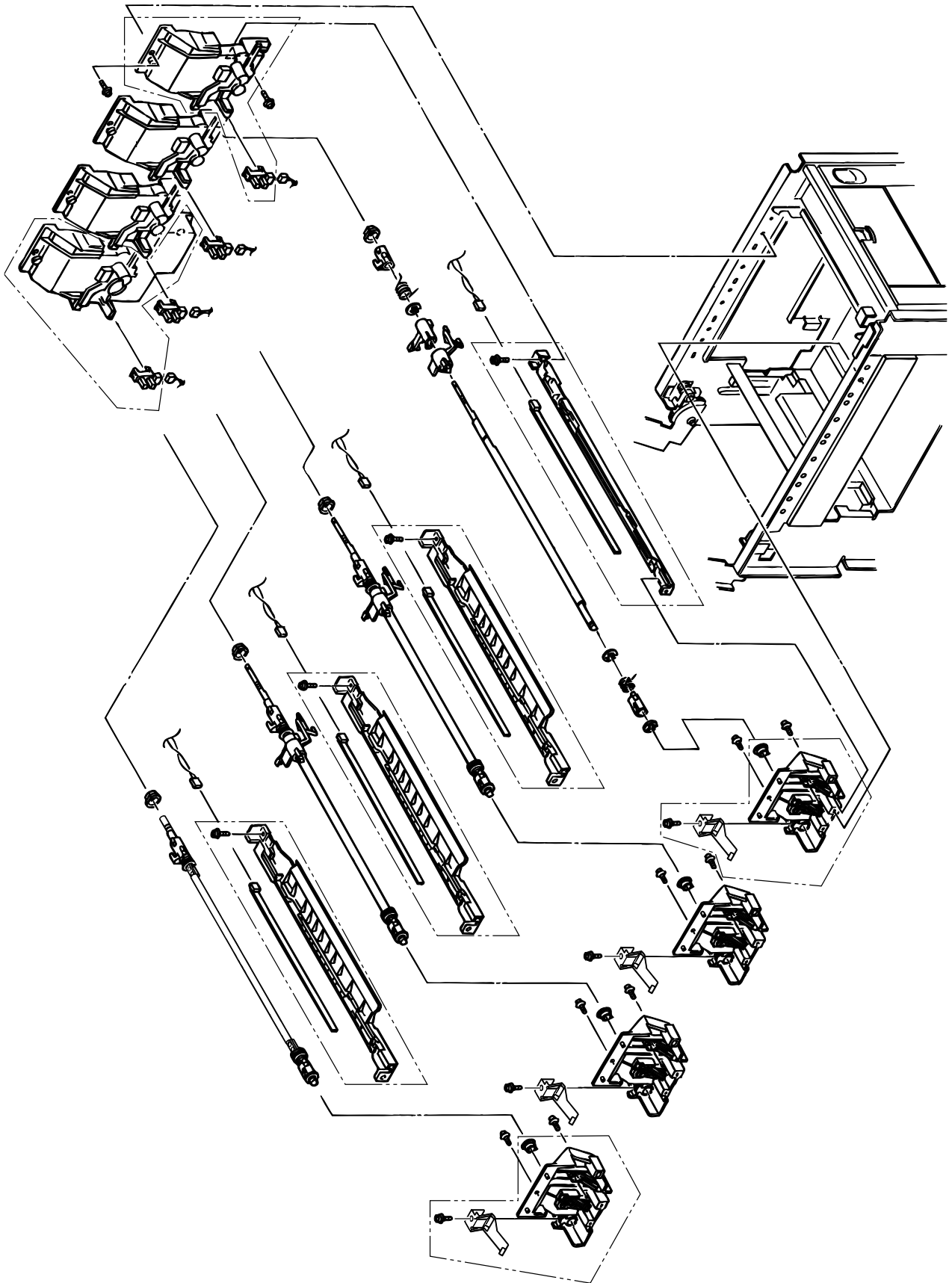
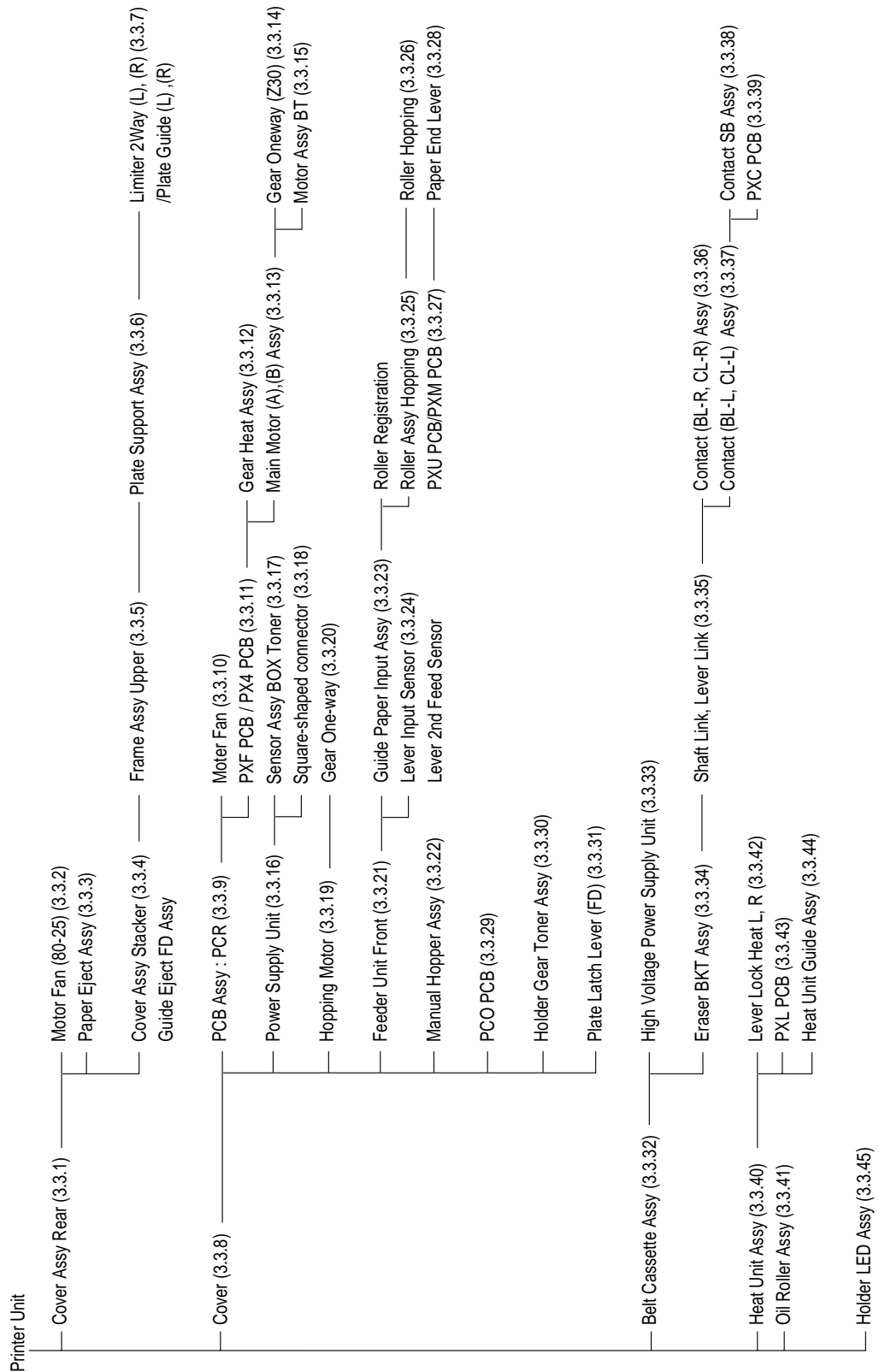


Figure 3-4

3.3 How to Change Parts

This section explains how to change parts and assemblies appearing in the disassembly diagram below.



3.3.1 Cover Assy Rear

1. Unscrew 2 screws ① then lift the cover assy rear ② a little bit, then remove the cover assy rear by releasing the lock of two claws.

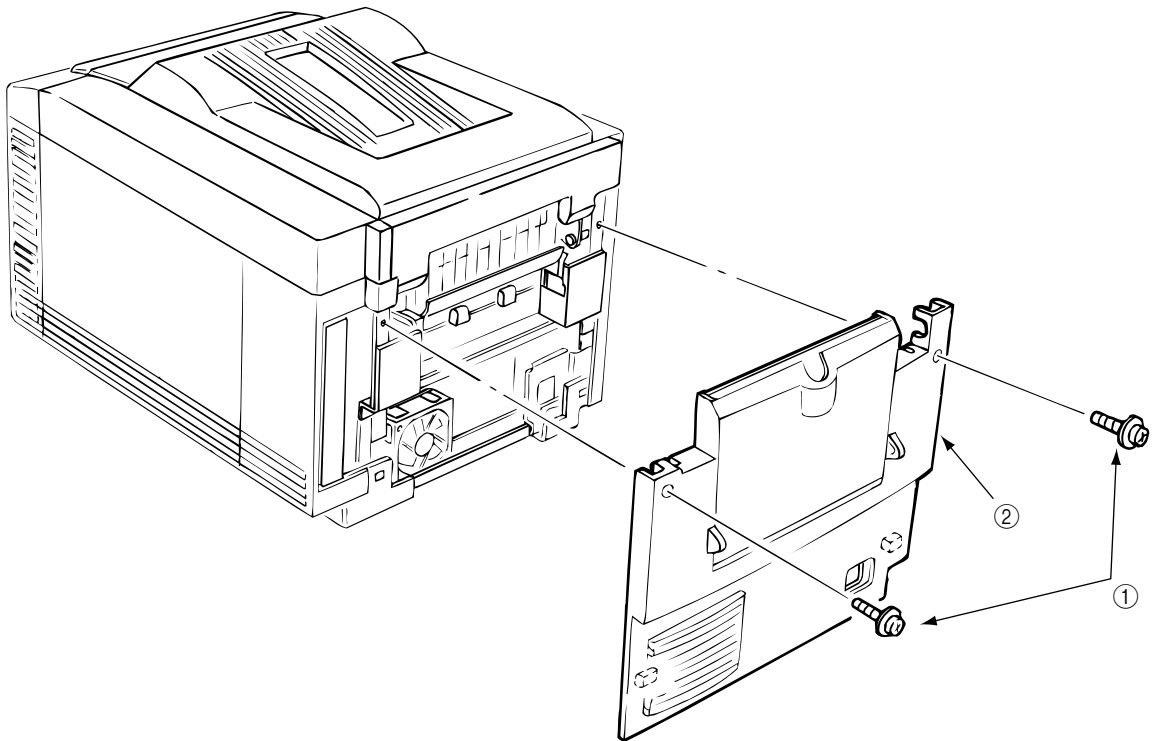


Figure 3.3.1 Cover Assy Rear

3.3.2 Motor-Fan (80-25)

1. Remove the cover assy rear. (See 3.3.1)
2. Unscrew 2 screws ①.
3. Detach the motor-fan ② from the guide with its right side lifted then draw the motor-fan.
4. Unplug the cable ③ then remove the motor-fan ②.

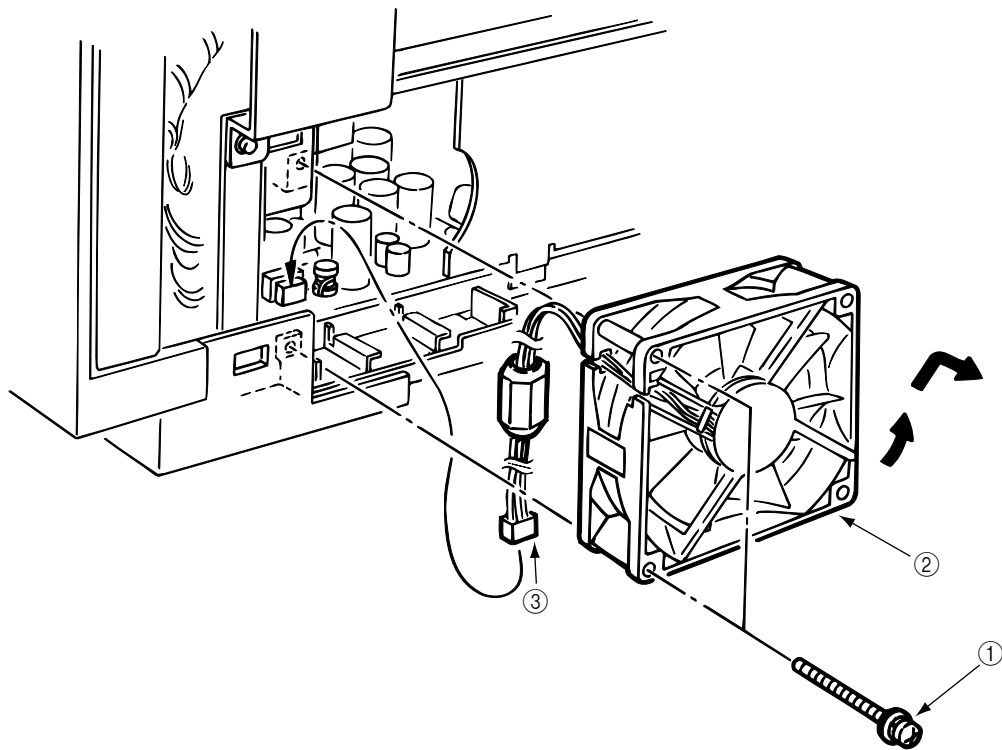


Figure 3.3.2 Motor-Fan (80-25)

3.3.3 Paper Eject Assy

The paper eject assy comprises the frame eject assy and the guide paper eject assy.

1. Remove the cover assy rear. (See 3.3.1)
2. Open the top cover.
3. Unscrew 4 screws ① then remove the frame eject assy ②.
4. Remove the guide paper eject assy ③ by releasing the lock of one claw.

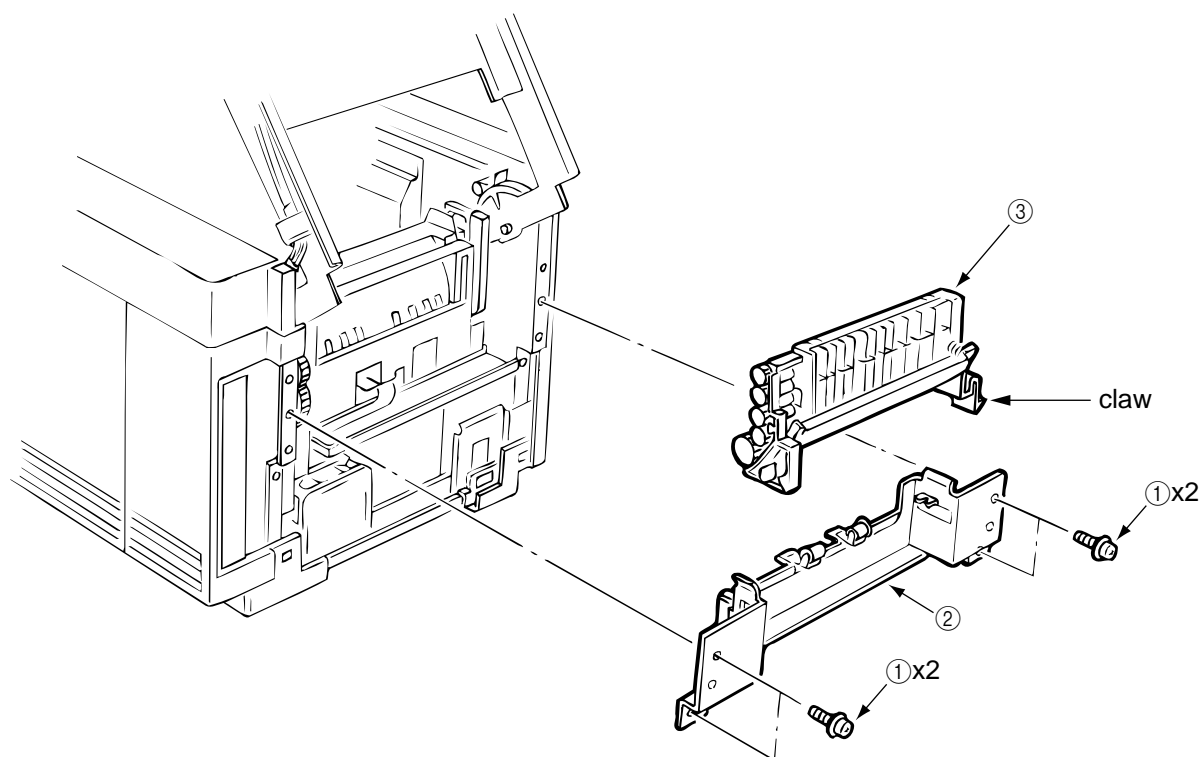


Figure 3.3.3 Paper Eject Assy

3.3.4 Cover Assy Stacker, Guide Eject FD Assy

Remove the belt cassette assy and the heat unit assy.

1. Remove the cover assy rear. (See 3.3.1)
2. Detach the cable from the cable clamp ① by releasing its lock.
3. Unscrew 8 screws ② then remove the cover assy stacker.
4. Unscrew 4 screws ④ then remove the guide eject FD assy ⑤.

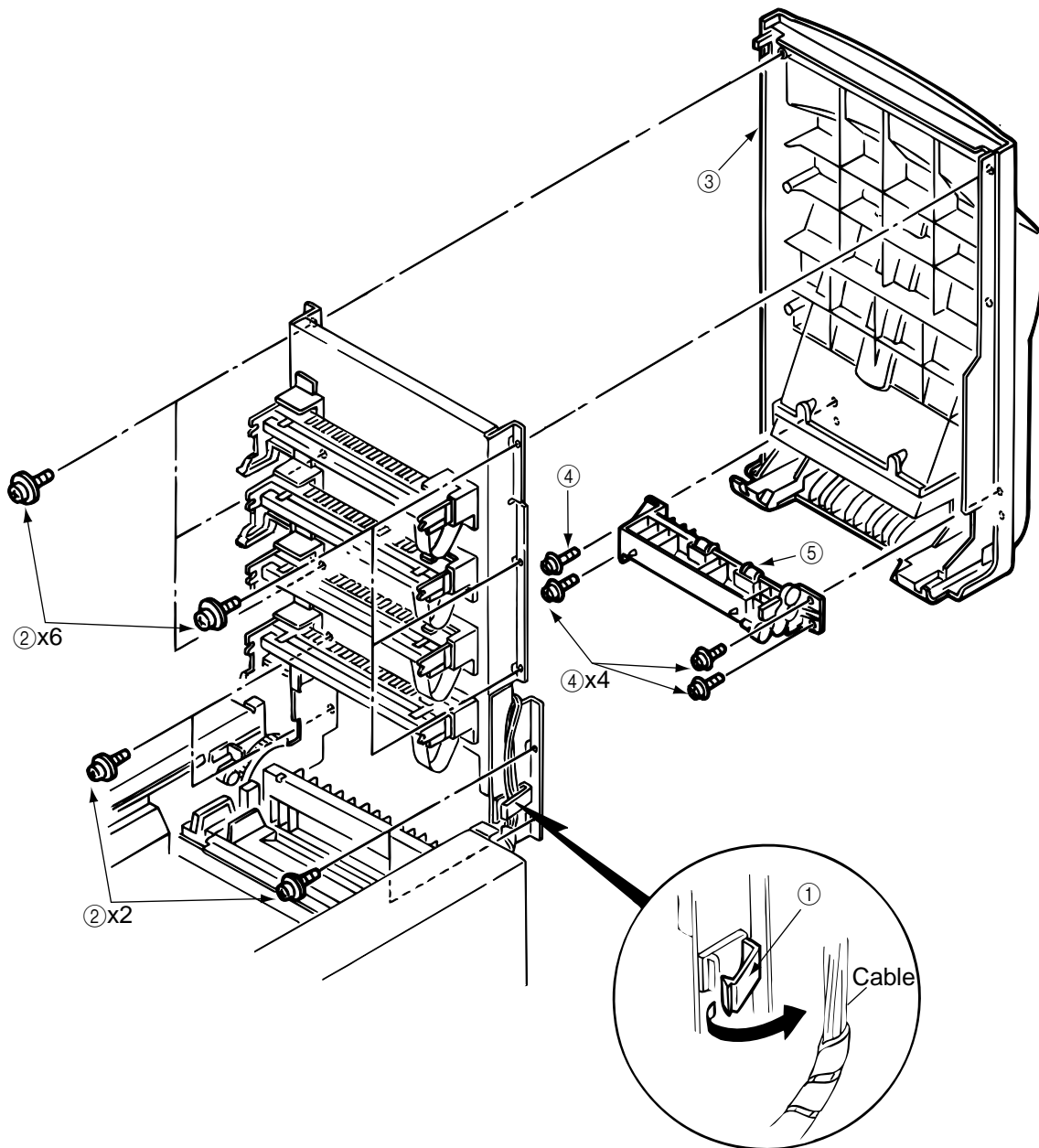


Figure 3.3.4 Cover Assy Stacker, Guide Eject FD Assy

3.3.5 Frame Assy Upper

1. Remove the cover assy rear. (See 3.3.1.)
2. Remove the cover assy stacker. (See 3.3.4.)
3. Remove the holder LED assy. (See 3.3.45.)
4. Detach the cable from the cable clamp ① by releasing its lock.
5. Remove connections of 4 connector cables ② and 4 cables ③.
6. Unscrew 4 screws ④ then remove the PCB ⑤.
7. Unscrew 2 screw ⑥ then remove Holder ⑦ by releasing the clamp of the claw.
8. Unscrew 4 screws ⑧ then remove the frame assy upper ⑨.

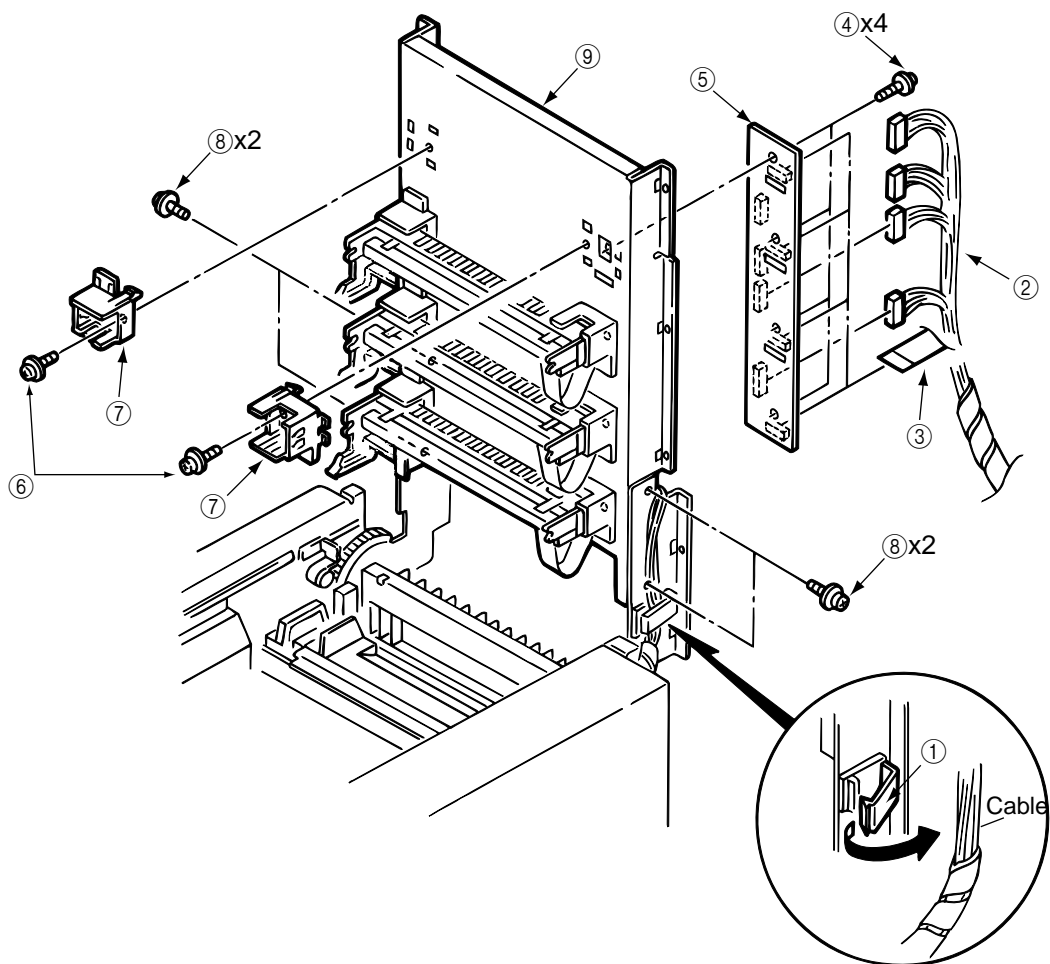


Figure 3.3.5 Frame Assy Upper

3.3.6 Plate Support Assy

The plate support assemblies are provided right and left. The method of those replacements is the same.

1. Remove the heat unit assy. (See 3.3.40)
2. Remove the cover assy rear. (See 3.3.1)
3. Remove the cover assy stacker. (See 3.3.4)
4. Remove the frame assy upper. (See 3.3.5)
5. Detach the cable from the cable clamp ① by releasing its lock.
6. Unscrew 2 screws ② then remove the plate support assy ③.
(Be careful not to lose the spring ④ which is removed with the plate support assy ③.)

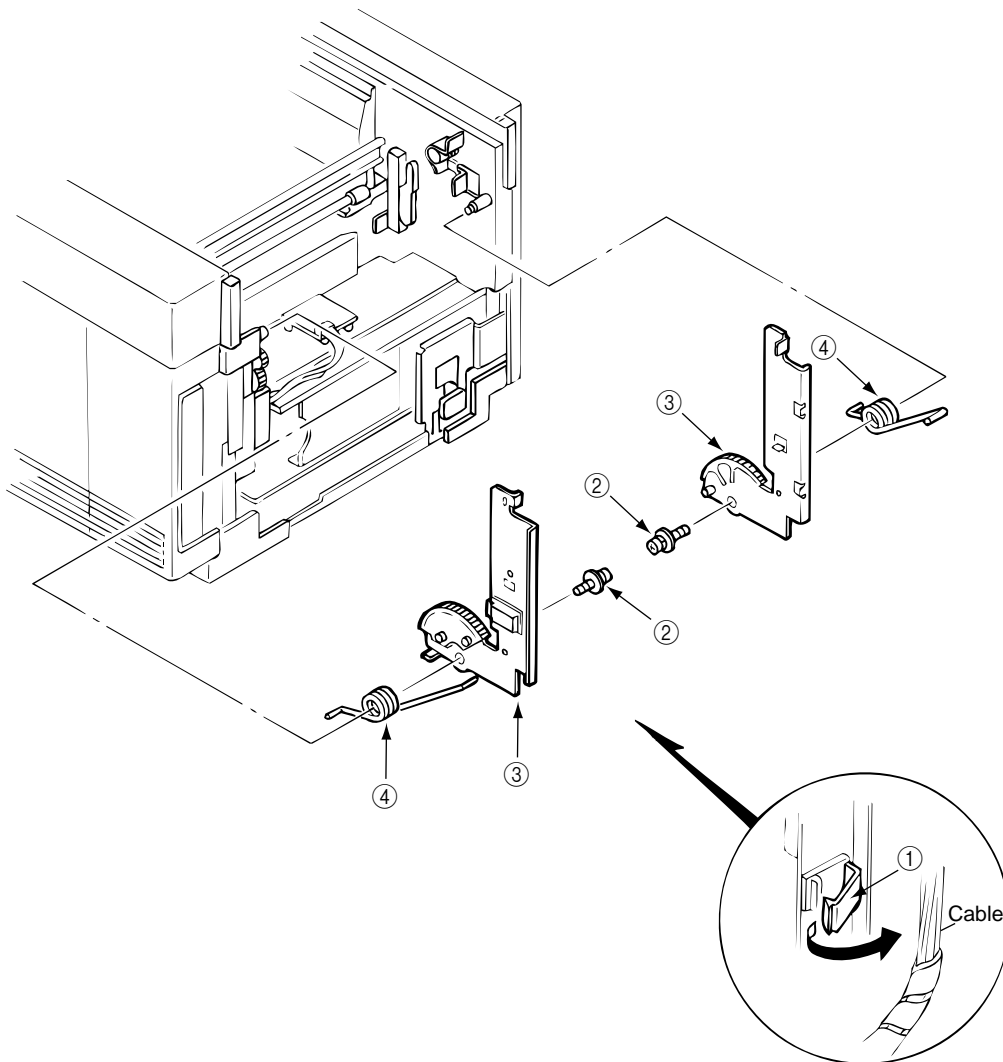


Figure 3.3.6 Plate Support Assy

3.3.7 Limiter 2way (L), (R) / Plate Guide (L) , (R)

1. Remove the plate support assy (L) and (R). (See 3.3.6)
2. Unscrew 2 screws ① then remove the limiter 2way (L) ② and the plate guide (L) ③.
3. Unscrew 2 screws ④ then remove limiter 2way (R) ⑤ and the plate guide (R) ⑥.

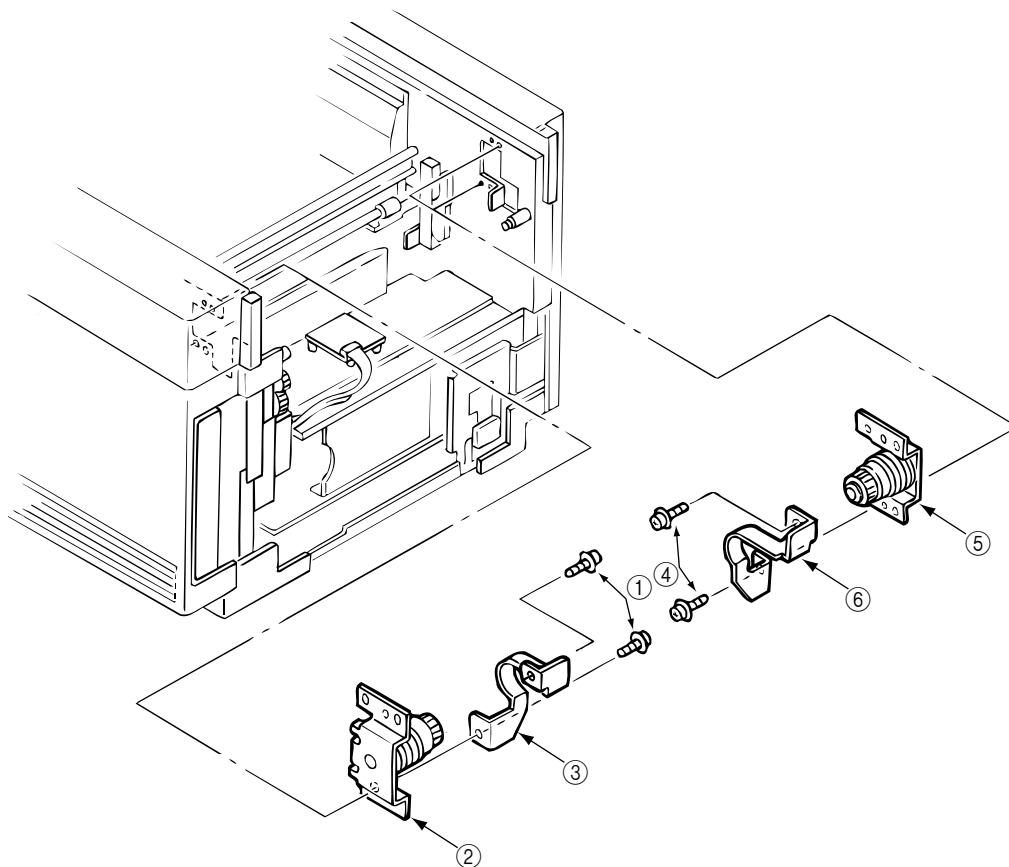


Figure 3.3.7 Limiter 2way (L), (R) / Plate Guide (L) , (R)

3.3.8 Cover

Describes the method of removing the cover assy side (L)/(R), cover assy OP panel, cover front (L)/(R) and the cover rear (L).

Remove the belt cassette assy and the heat unit assy.

1. Remove the cover assy rear. (See 3.3.1)
2. Remove the cover assy stacker. (See 3.3.4)
3. Unscrew 2 screws ① then remove the frame side (L) ②.
4. Unscrew 2 screws ③ then release the lock of the claw with the cover assy side (R) ④ lifted a little bit, then remove the cover assy side (R).
5. Unplug the operator panel cable ⑤ from the PCM PCB.
6. Open the FDR unit front in the arrow direction.
7. Unscrew 2 screws ⑥ then remove the cover assy OP panel ⑦.
8. Unscrew 2 screws ⑧ then release the lock of the claw with the cover front (R) ⑨ pushed up then remove the cover front (R).
9. Unscrew 2 screws ⑩ then remove the cover front (L) ⑪.
10. Unscrew 2 screws ⑫ then remove the cover rear (L) ⑬.
11. Pull off the film ⑮ glued on the cassette guide.
11. Release the engagement with the guide by lifting the cover assy side (L) ⑭, then remove the cover assy side (L).

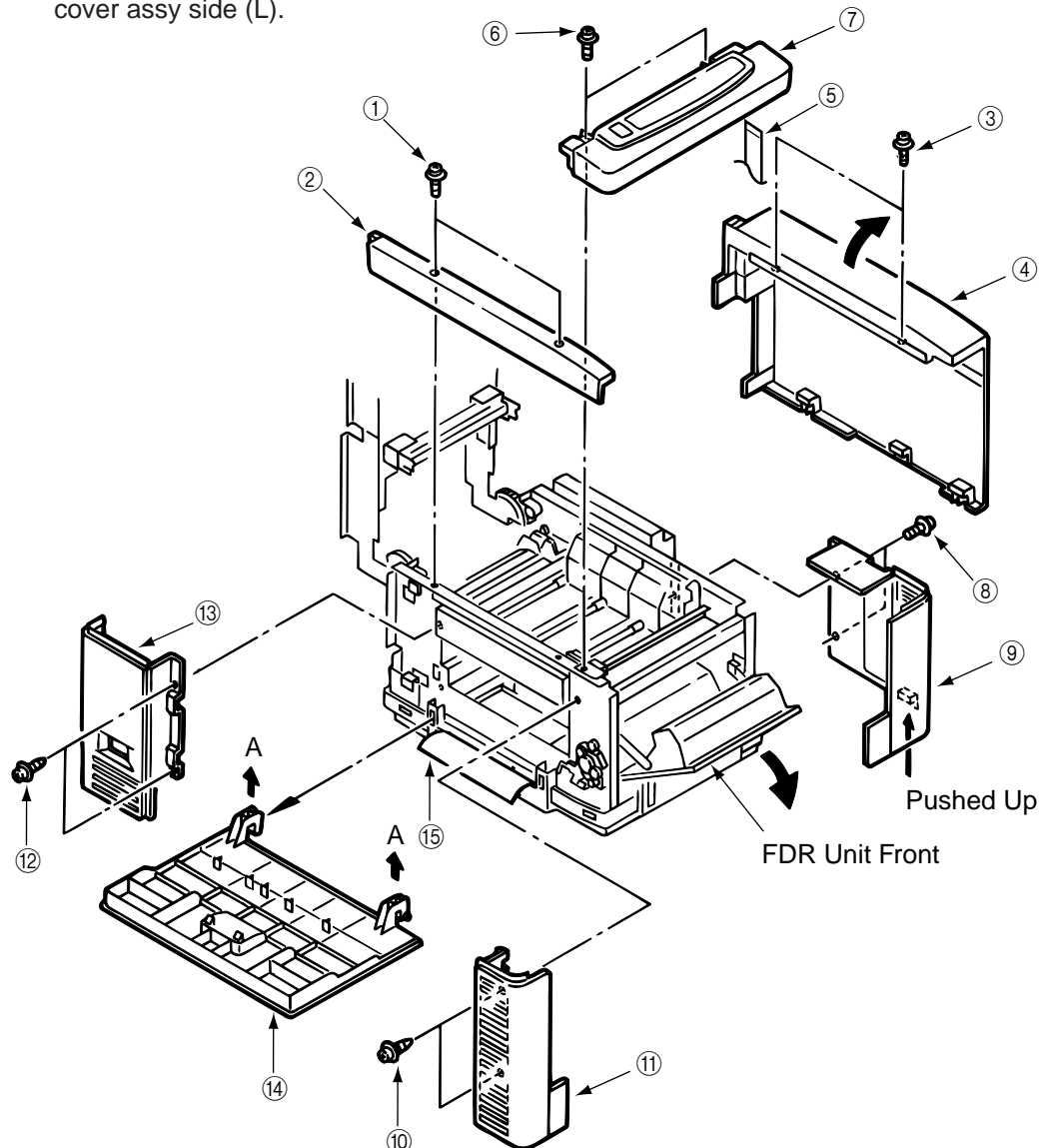


Figure 3.3.8 Cover

3.3.9 PCB Assy : PCR

Remove the belt cassette assy and the heat unit assy.

1. Open the top cover.
2. Unscrew 2 screws ① to release the lock of the claw by lifting the cover assy side (R) ② a little bit, then remove the cover assy side (R).
3. Unscrew 2 screws ⑧ to remove the plate shielded (CU) ⑨.
4. Unscrew 3 screws ③ to remove the plate shield ④.
5. Unplug the operator panel cable ⑤ from the PCR PCB.
6. Unscrew 8 screws ⑥ to remove the PCB assy : PCR ⑦.

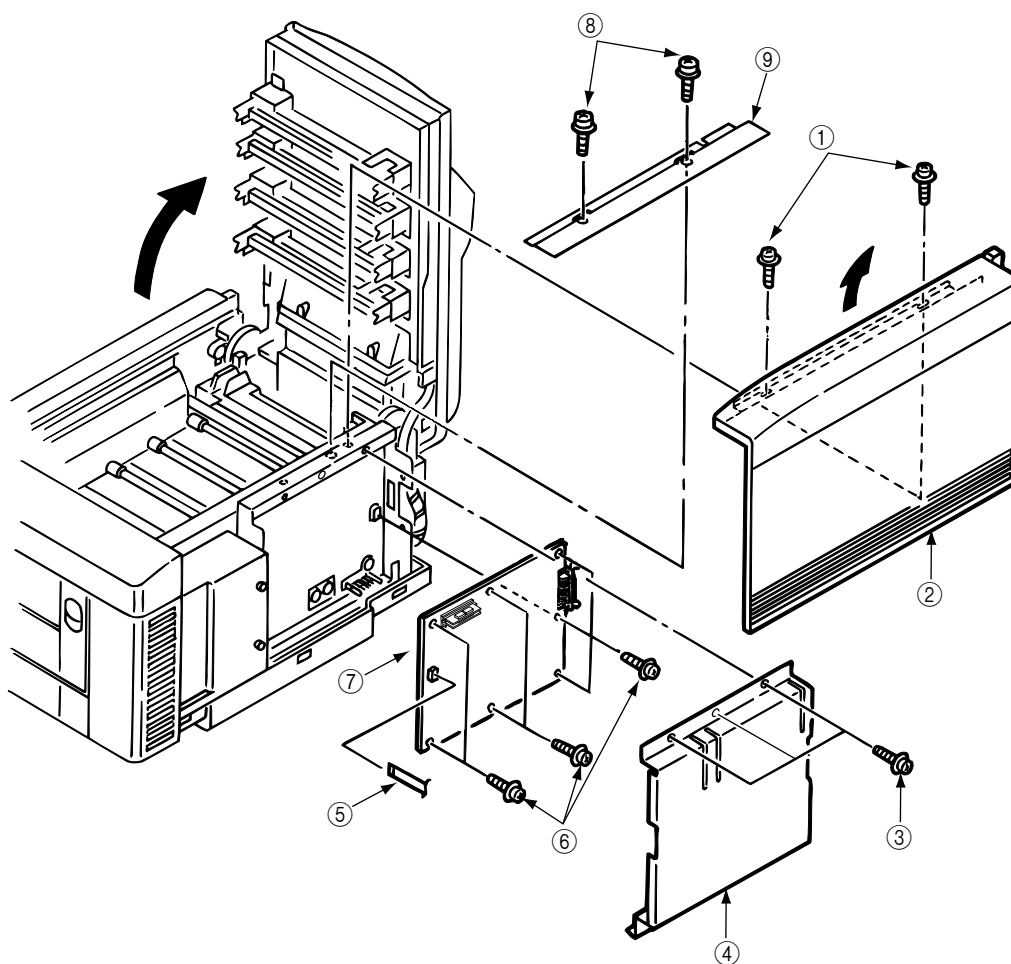


Figure 3.3.9 PCB Assy : PCR

3.3.10 Motor Fan (CU)

1. Open the top cover.
2. Remove the cover assy side (R), frame side (L), cover assy OP panel and the cover front (R). (See 3.3.8)
3. Unplug the cable ① and unscrew 2 screws ②, 2 collars ④ and then remove the motor fan (CU) ③.

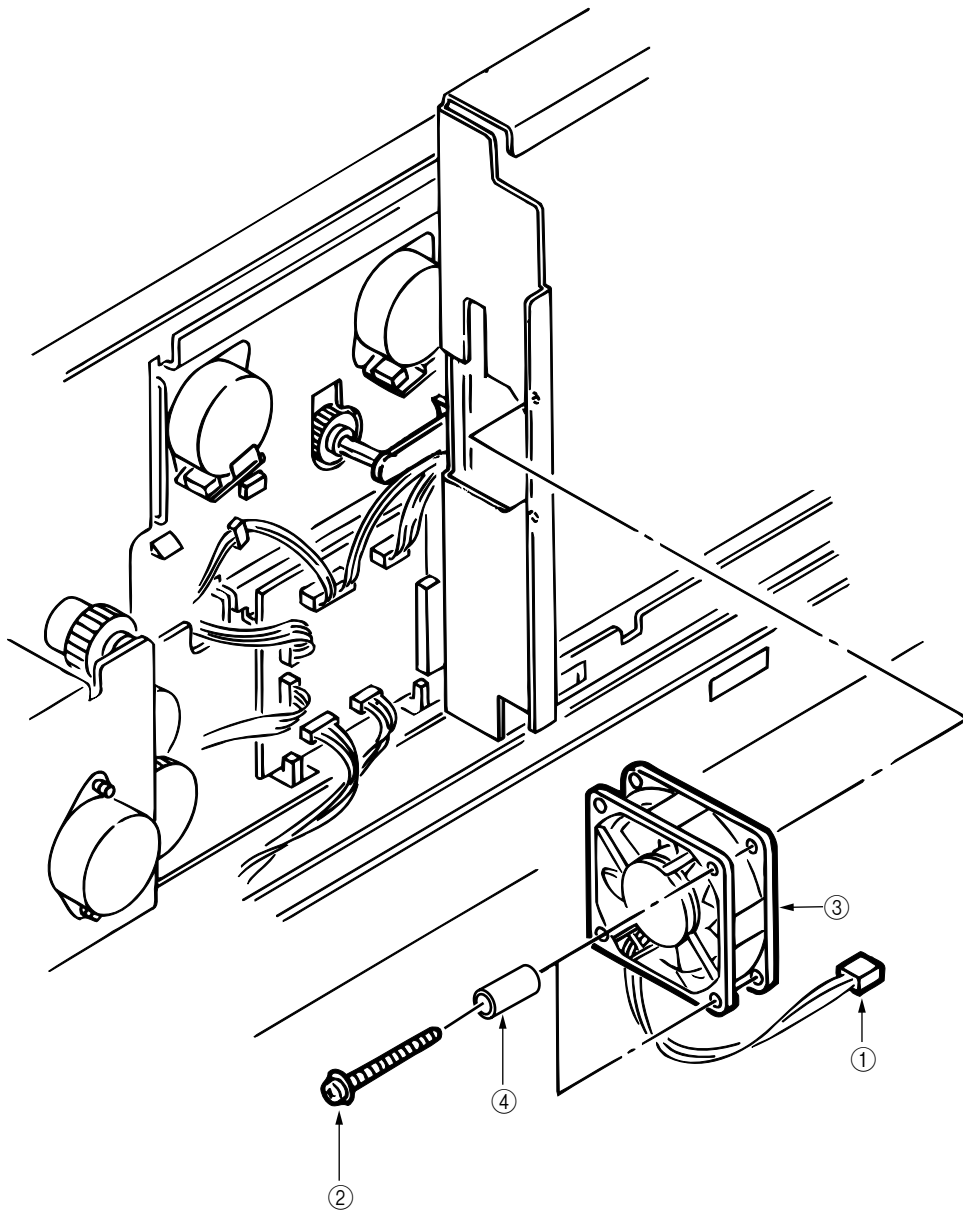


Figure 3.3.10 Motor Fan (CU)

3.3.11 PXF PCB/PX4 PCB

Since the PXF PCB and PX4 PCB are connected with each other via the connector, remove them at the same time.

1. Remove the PCB assy : PCR. (See 3.3.9)
2. Unscrew 5 screws ① then remove the cover CU②.
3. Unplug all the cables ⑤ connected to the PXF PCB ③ and PX4 PCB ④.
4. Unscrew 5 screws ⑥ then remove the PXF PCB③ and PX4 PCB④ at the same time.

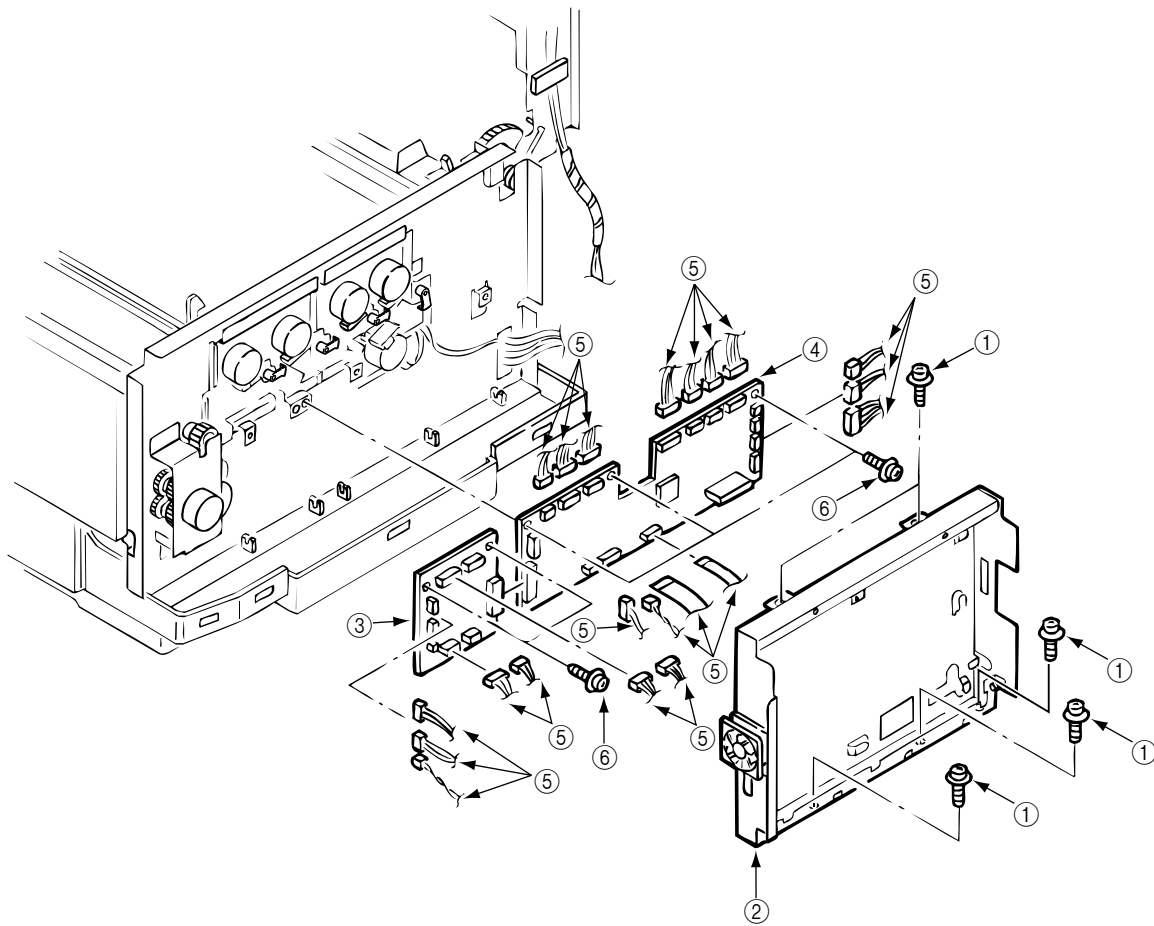


Figure 3.3.11 PXF PCB/PXS PCB

3.3.12 Gear Heat Assy

1. Remove the cover assy side (R), cover assy OP panel, cover front (R) and the cover rear (L). (See 3.3.8)
2. Remove the cover CU then unplug all the cables connected to the PXS PCB and unscrew 3 screws. (See 3.3.11)
3. Unplug all the cables connected to the PXF PCB then remove the PX4 PCB. (See 3.3.11) (Be careful not to damage the connector when unplugging cables connected to the PXF PCB.)
4. Remove the heat unit assy. (See 3.3.40)
5. Remove the guide paper eject assy. (See 3.3.3)
6. Remove the motor fan (80-25). (See 3.3.2)
7. Unscrew 5 screws ① and unplug the cable ② then remove the guide heat assy ③.
8. Unscrew 2 screws ④ then remove the motor (ID) ⑤.

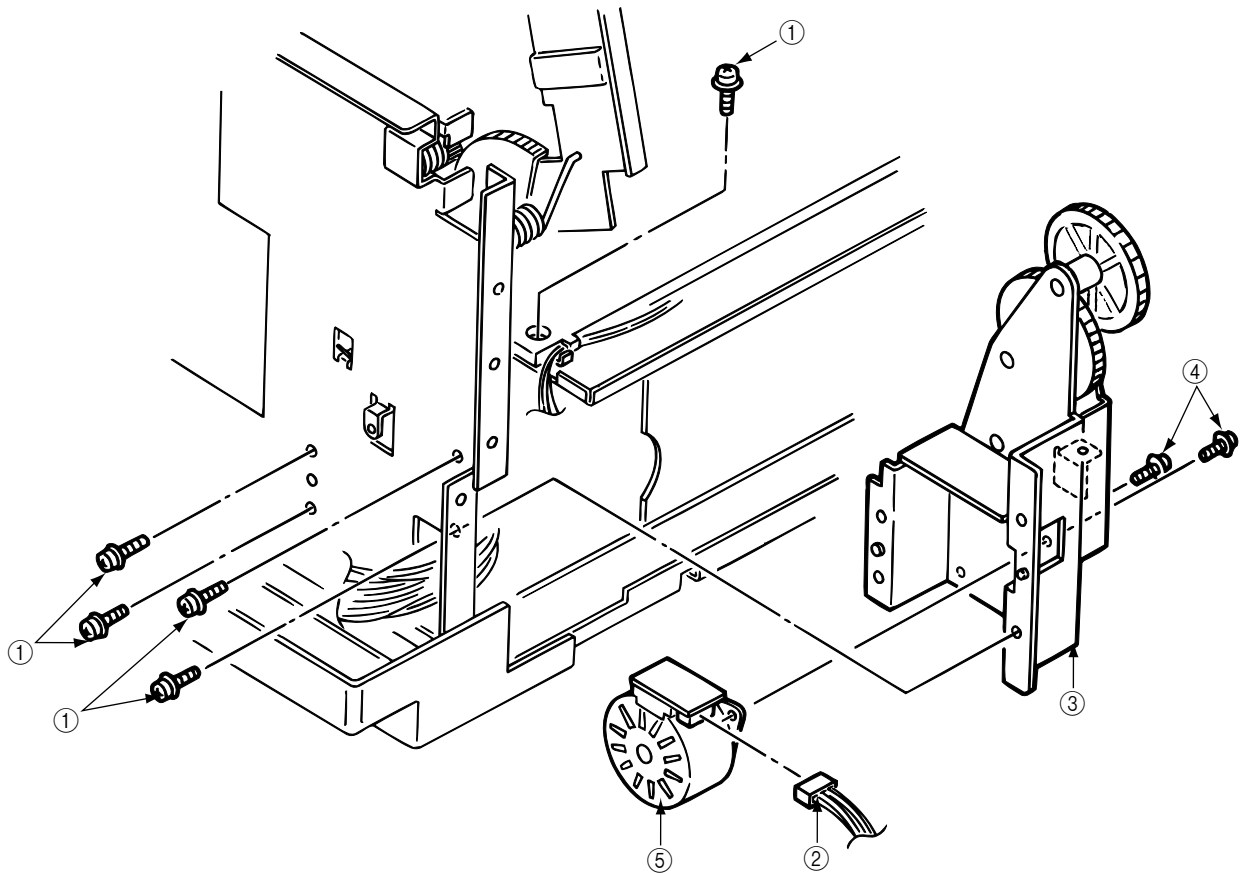


Figure 3.3.12 Gear Heat Assy

3.3.13 Main Motor (A), (B) Assy

1. Remove the PXF PCB and PX4 PCB. (See 3.3.11)
2. Unscrew 4 screws ⑧ and remove 4 plate-Earth ⑨ and 4 lever Up/Dn 2 ①.
3. Unplug all the cables ② connected and unscrew 4 screws ③, then remove the main motor (A) assy ④.
4. Unplug all the cables ⑤ connected and unscrew 3 screws ⑥, then remove the main motor (B) assy ⑦.

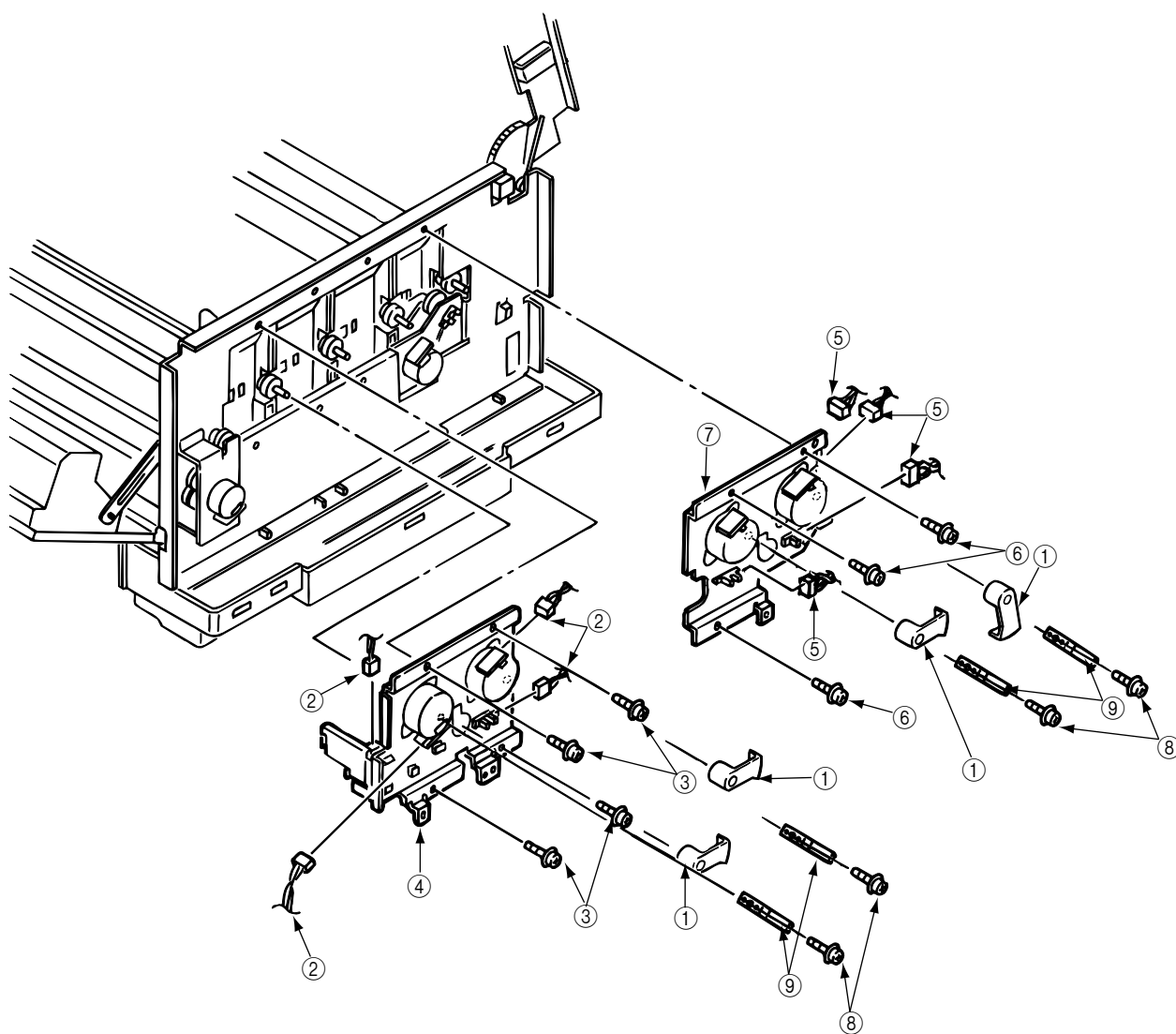


Figure 3.3.13 Main Motor (A), (B) Assy

3.3.14 Gear One-way (Z30)

Four gear one-ways (Z30) are provided but the method of those replacements is the same. Do not disassemble the gear one-ways (Z30) because they are assemblies requires adjustment.

1. Remove the PCB assy : PCM. (See 3.3.9)
2. Remove the cover CU. (See 3.3.11)
3. Remove the 4 Plate-Earth and 4 lever Up/Dn 2. (See 3.3.13)
4. Release the lock with the shaft by spreading the claw, then remove the gear one-way (Z30)
①.

[Notice for mounting]

Mount the gear one-way (Z30) by fitting it with the shaft link turned in the arrow direction.

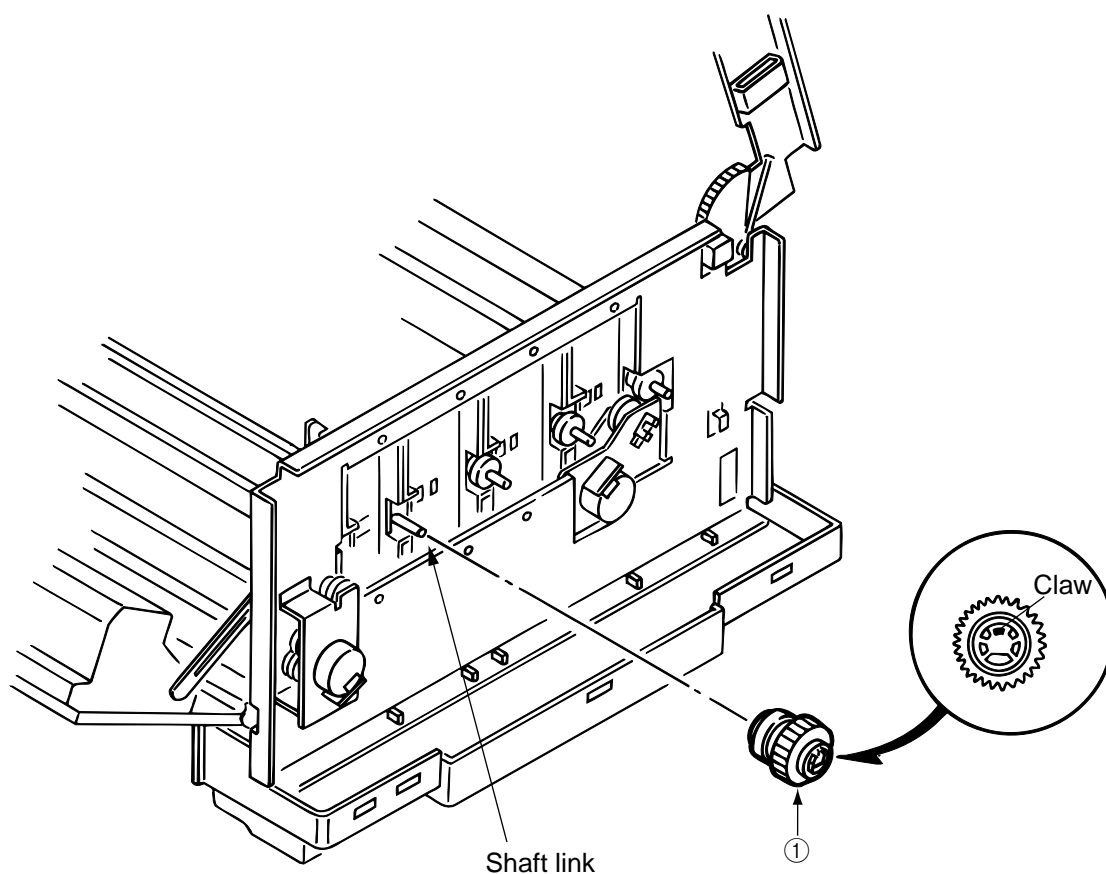


Figure 3.3.14 Gear One-way (Z30)

3.3.15 Motor Assy BT

1. Remove the main motor (B) assy. (See 3.3.13)
2. Unplug 2 cables ① connected and unscrew 2 screws ②, then remove the motor assy BT ③.

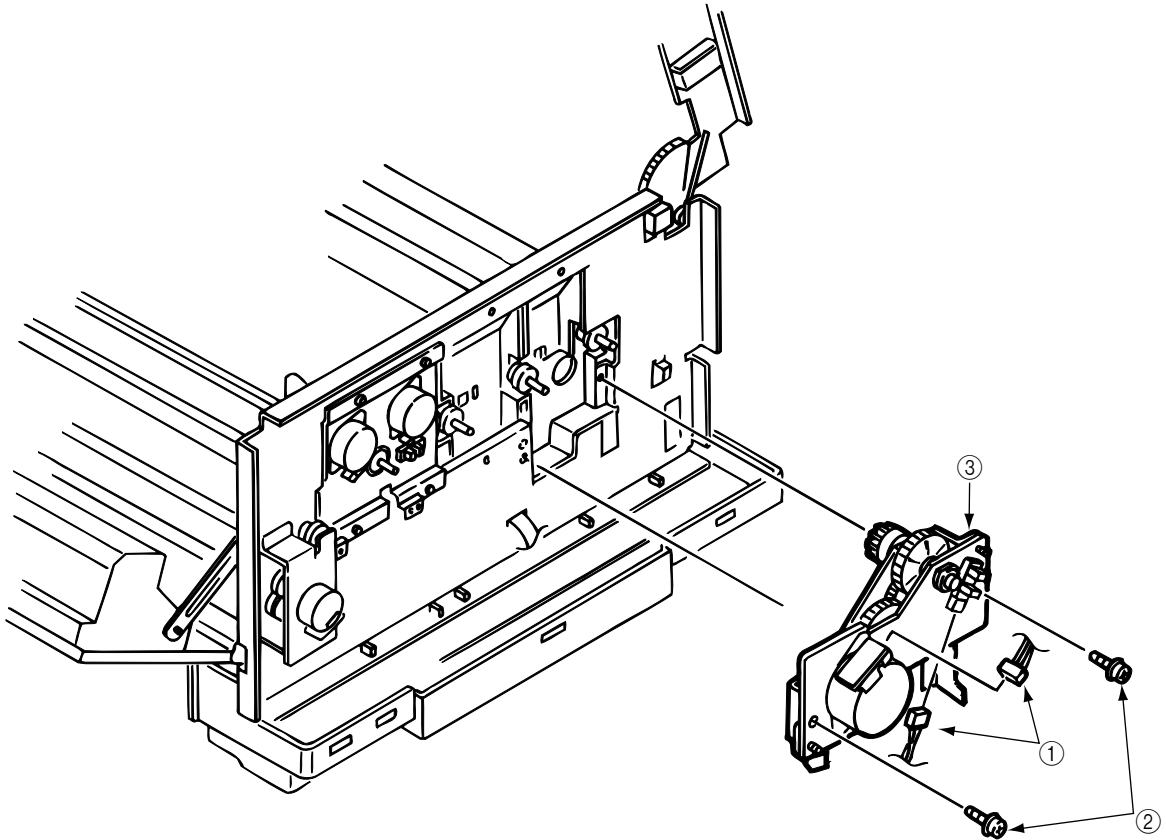


Figure 3.3.15 Motor Assy BT

3.3.16 Power Supply Unit, Holder Inlet, Sheet Insulation

1. Remove the motor-fan (80-25). (See 3.3.2)
2. Remove the frame side (L), the cover assy side (R) and the cover rear (L). (See 3.3.8)
3. Unplug the cable ①.
4. Remove the holder inlet ③ by unscrewing 2 screws ②, then remove the power switch ④ and unplug the AC socket ⑤.
5. Draw the power supply unit ⑦ by unscrewing 3 screws ⑥, then unplug the cable ⑧.

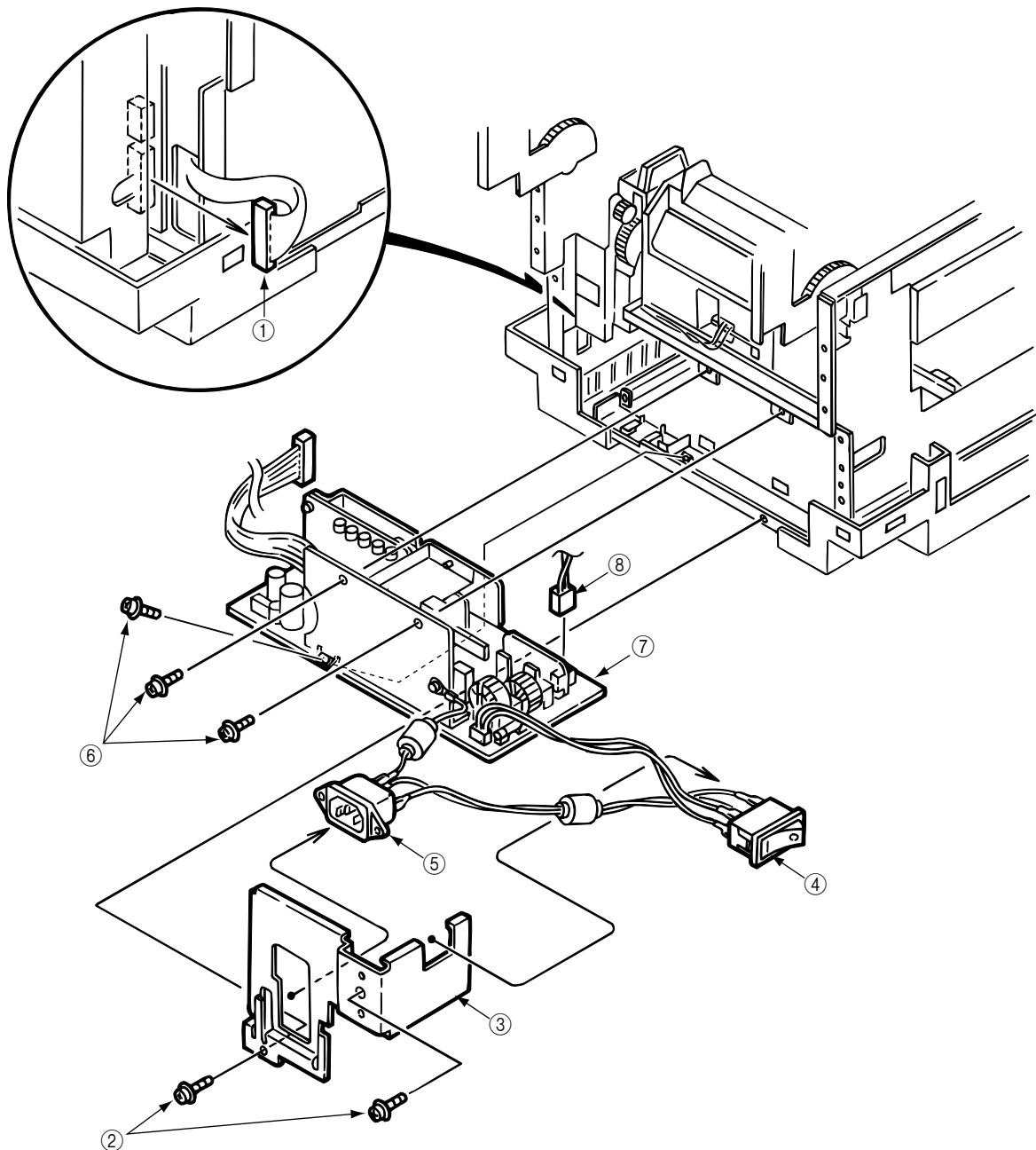


Figure 3.3.16 Power Supply Unit, Holder Inlet, Sheet Insulation

3.3.17 Sensor Assy Box Toner

1. Remove the power supply unit. (See 3.3.16)
2. Unscrew the screw ① then remove the sensor assy box toner ② together with the bracket ③.
3. Unscrew the screw ④ then remove the sensor assy box toner ②.

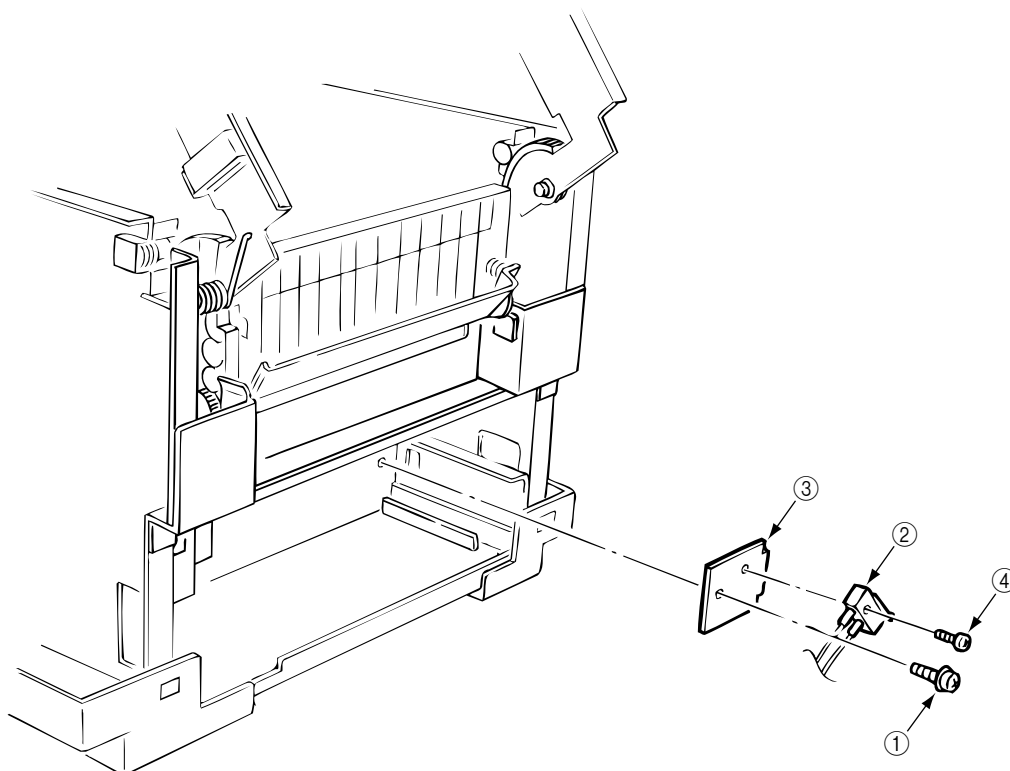


Figure 3.3.17 Sensor Assy Box Toner

3.3.18 Square-shaped Connector

Remove the heat unit assy.

1. Draw the power supply unit. (See 3.3.16) (Do not remove the power switch and AC socket from the holder inlet.)
2. Unplug the cable ①.
3. Remove cable ②, screw ⑤ bracket ⑥ and cable ⑦ in order and then take off SW from bracket ⑥ to pull off square-shaped connector ④.

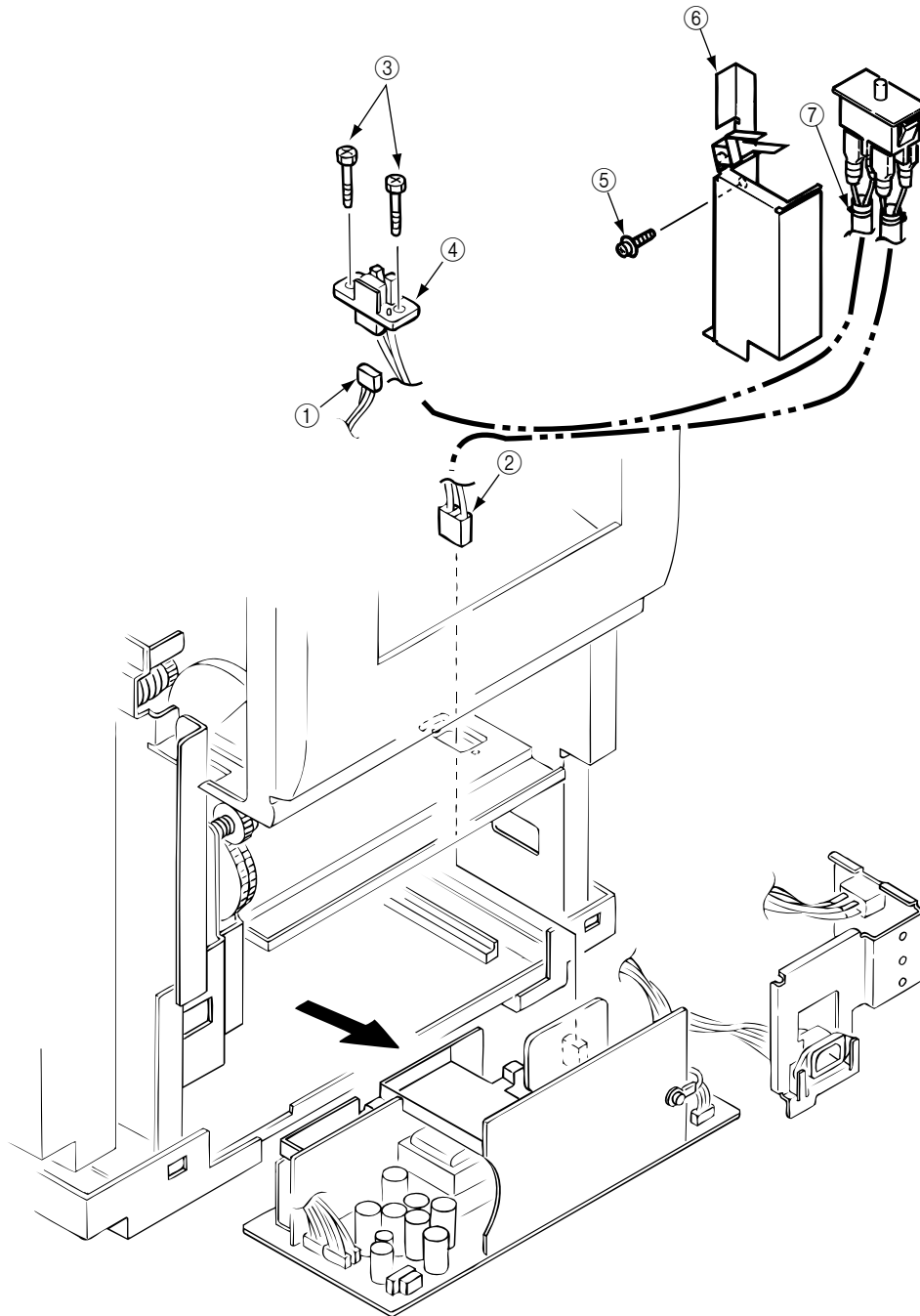


Figure 3.3.18 Square-shaped Connector

3.3.19 Hopping Motor

1. Remove the cover assy side (R), cover assy OP panel and the cover front (R). (See 3.3.8)
2. Unscrew 2 screws ① and unplug the cable ②, then remove the bracket hopping motor ③.
(Be careful not to lose the gears ⑤, ⑥ and ⑦ which slip off at this time.)
3. Unscrew 2 screws ⑧ then remove the hopping motor ③.

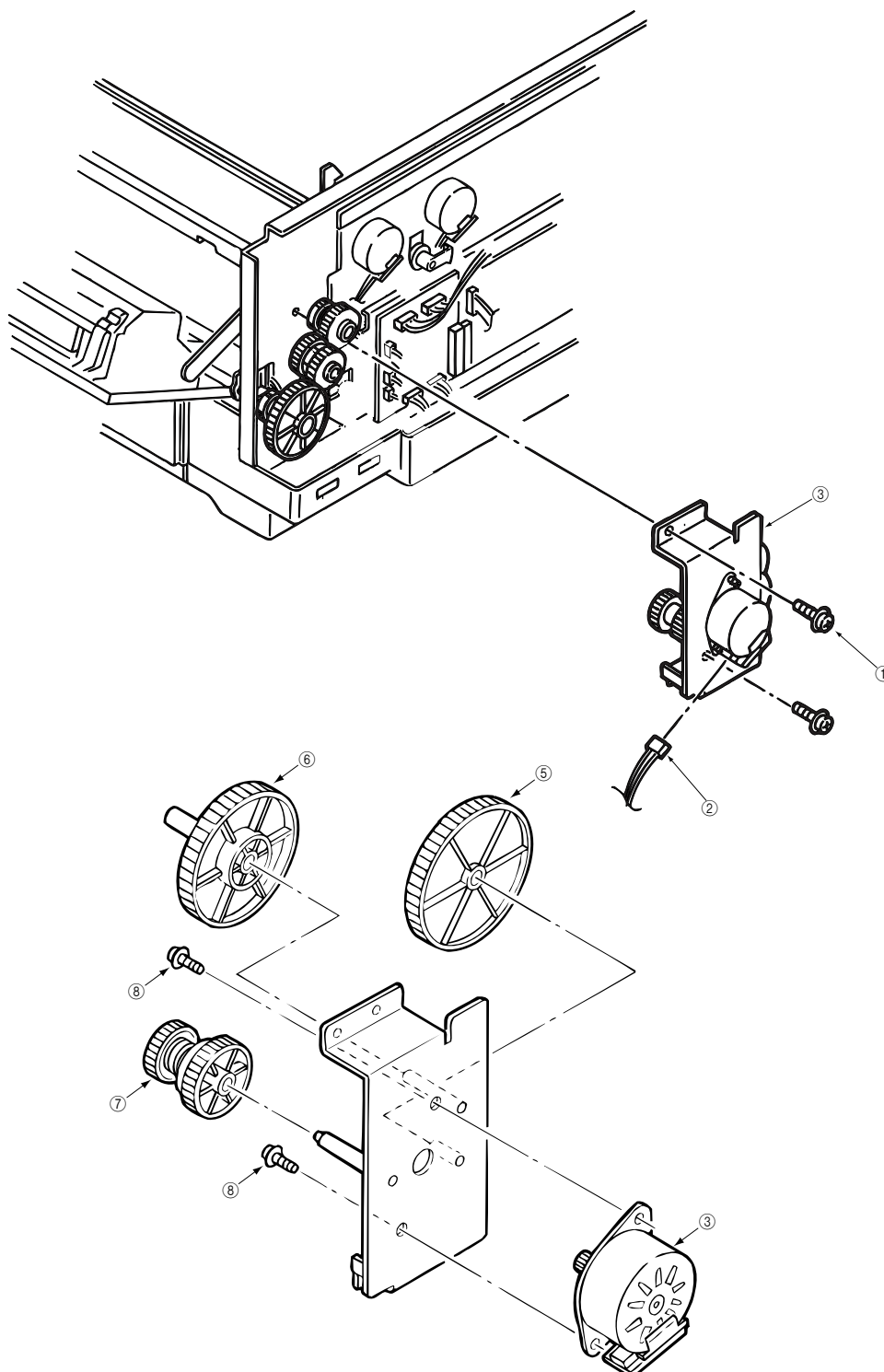


Figure 3.3.19 Hopping Motor

3.3.20 Gear One-way

1. Remove the bracket hopping motor. (See 3.3.19)
2. Remove the spacer ④ first and release the locks with the shaft by spreading the claws of the gear one-way ①, ② and ③, then remove the gear one-ways.

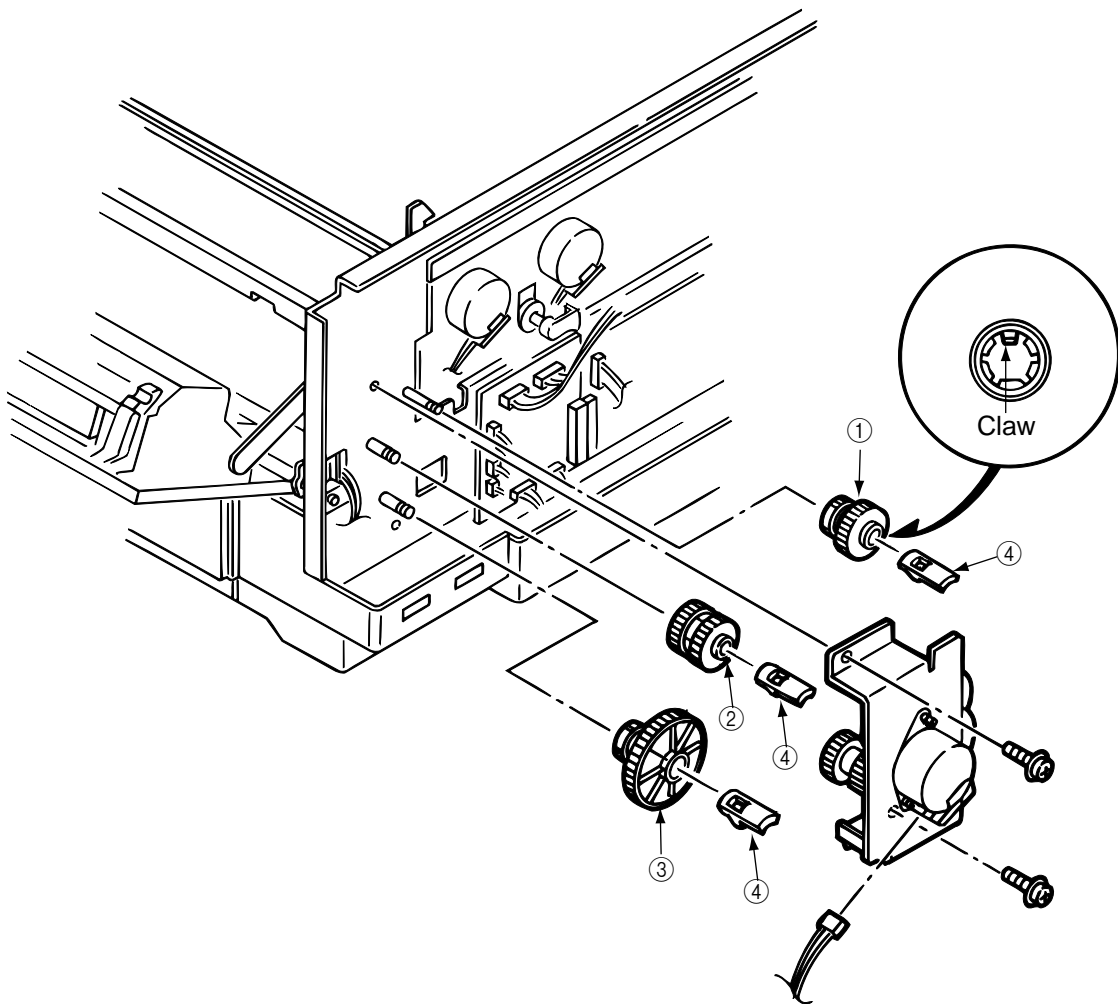


Figure 3.3.20 Gear One-way

3.3.21 Feeder Unit Front

1. Remove the cover assy side (R), cover assy OP panel, cover front (R) and the cover front (L). (See 3.3.8.)
2. Remove the cover CU. (See 3.3.11)
3. Unscrew the screw ⑧ and remove the cable ⑨.
4. Unplug the cable ① and unscrew the screw ②, then remove the bracket FF shaft ③.
5. Remove 2 E-rings ④ then remove the feeder unit front ⑤.
6. Unscrew each 2 screws ⑥ then remove 2 bracket FF links ⑦.

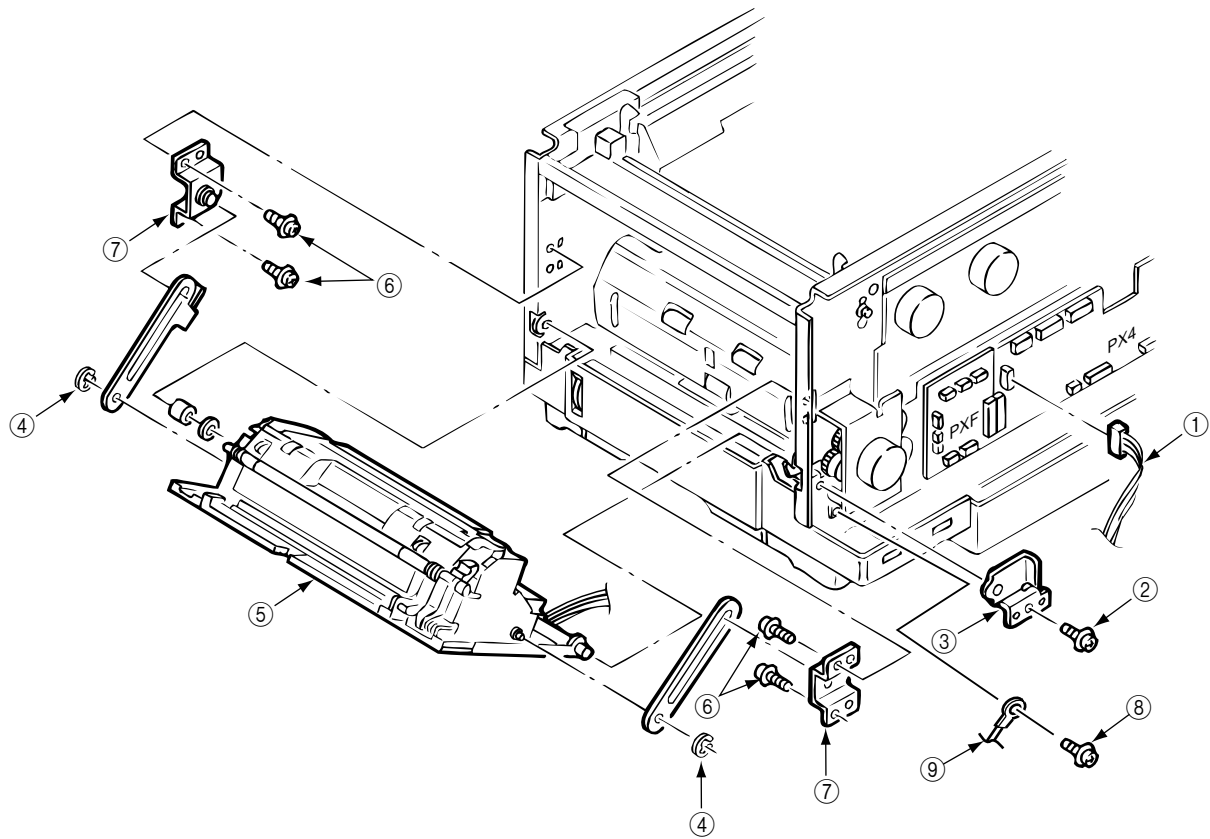


Figure 3.3.21 Feeder Unit Front

3.3.22 Manual Feed Hopper Assy

1. Open the manual feed hopper assy.
2. Release the engagement between the holder and the link then remove the manual feed hopper assy. (Be careful not to damage the holder.)

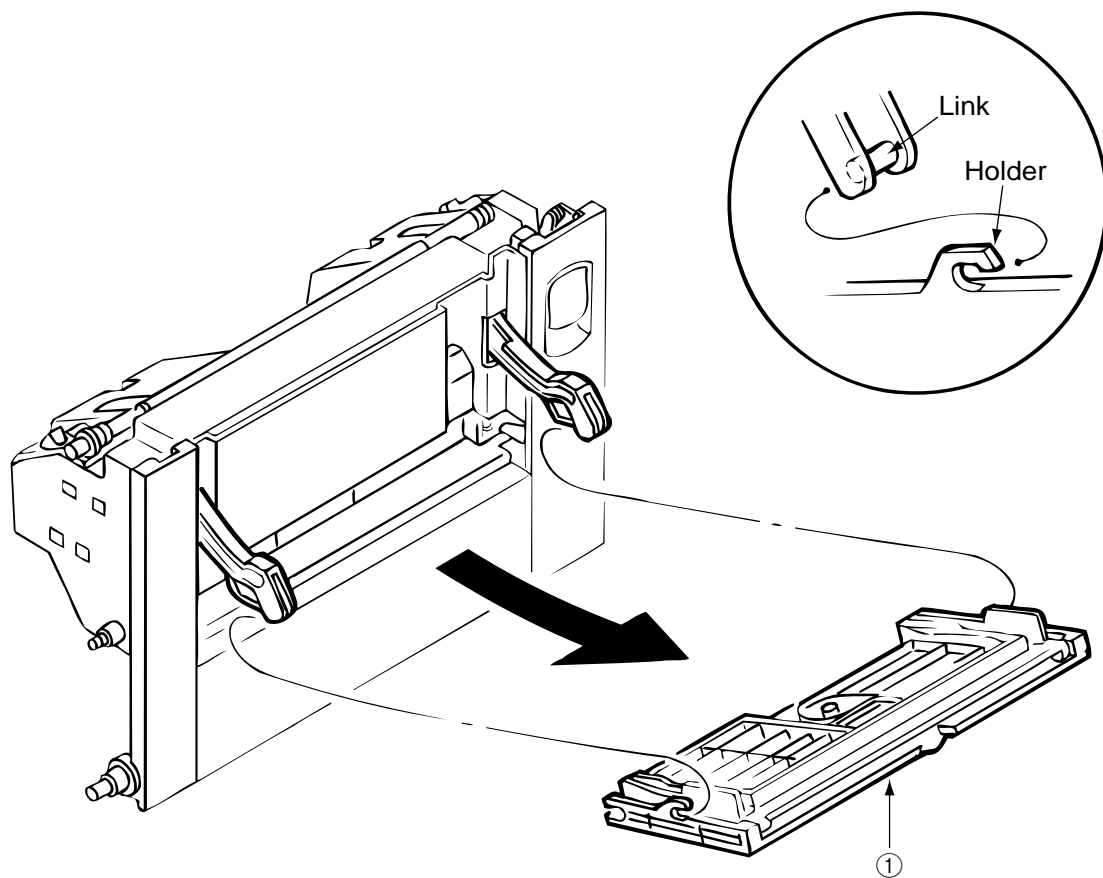


Figure 3.3.22 Manual Feed Hopper Assy

3.3.23 Guide Paper Input Assy

1. Remove the cover assy OP panel, cover front (R) and the cover front (L). (See 3.3.8)
2. Remove the feeder unit front. (See 3.3.21)
3. Unscrew 4 screws ① then draw out the guide paper input assy ② from the left side by rotating its upper part . (Be careful not to damage the lever sensor resist.)

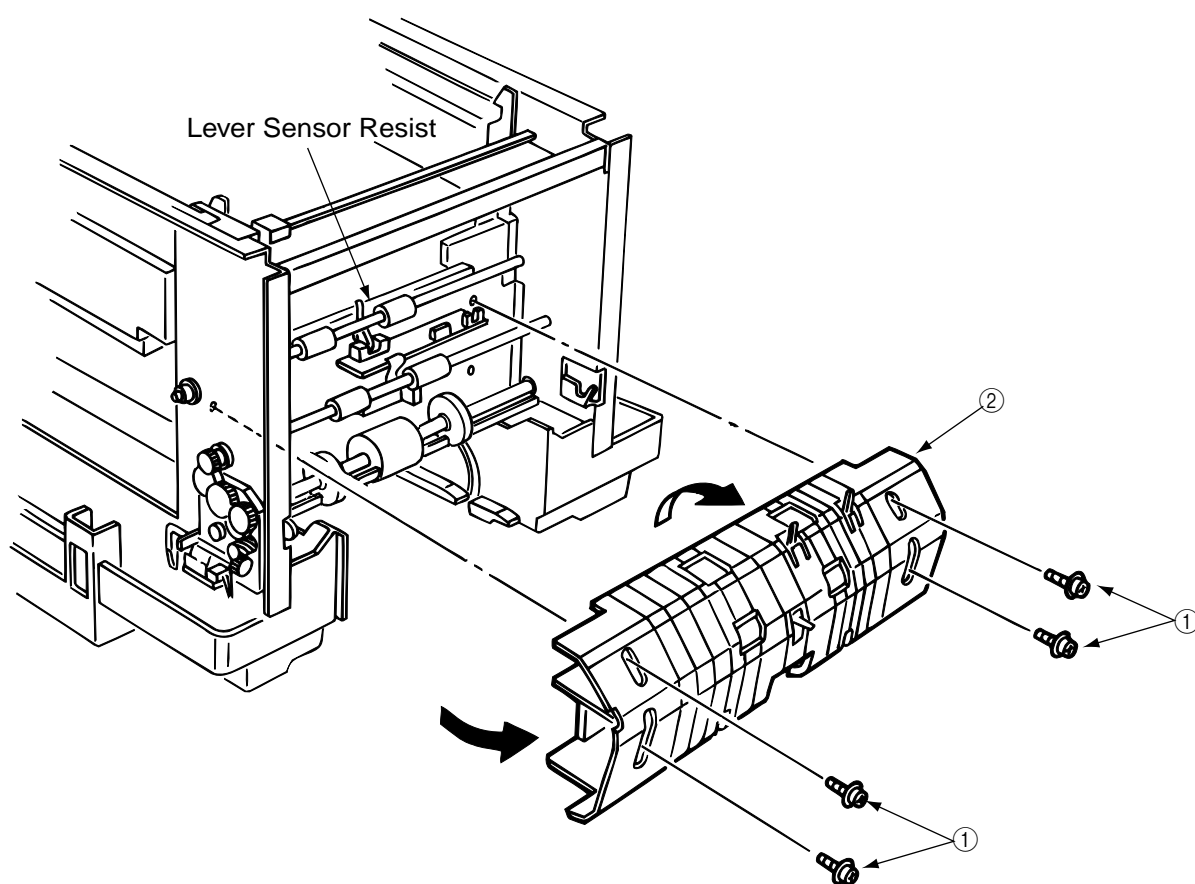


Figure 3.3.23 Guide Paper Input Assy

3.3.24 Two Lever Input Sensors, Lever 2nd Feed Sensor

1. Remove the guide paper input assy. (See 3.3.23)
2. Release the engagement with the guide by pressing 2 lever input sensors ② in the arrow direction, then remove them.
3. Release the engagement with the guide by pressing the lever 2nd feed sensor ② in the arrow direction, then remove the sensor.

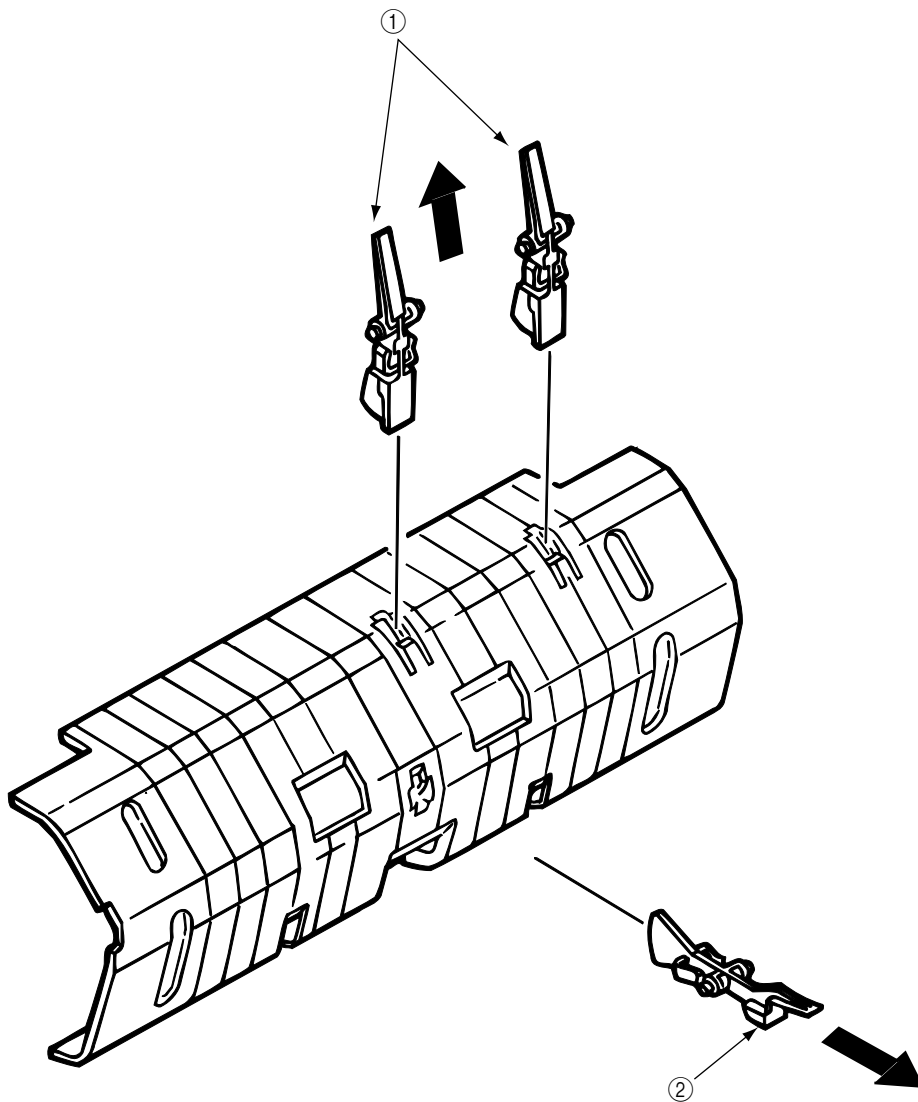


Figure 3.3.24 Two Lever Input Sensors, Lever 2nd Feed Sensor

3.3.25 Roller Registration, Roller Assy Hopping

1. Remove the guide paper input assy. (See 3.3.23)
2. Remove the bracket hopping motor. (See 3.3.19)
3. Remove the gear one-way. (See 3.3.20)
4. Remove the holder gear toner assy. (See 3.3.30)

[Removal of the roller registration]

5. Remove the gear ① and 2 bushes ② and 2 bearings ③, then 2 roller registrations ④.

[Removal of the roller assy hopping]

6. Remove the bush ⑤ and the bearing ⑥.
7. Remove E-rings ⑨ of the sub-roller hopping at both sides of hopping roller and then release the lock of the roller hopping ⑦ with the shaft ⑧ by spreading the claw, then remove the roller hopping from the left side by sliding the shaft ⑧ in the arrow direction. (Be careful not to lose the knock-pin for fastening the roller hopping ⑦, which slips off together.)

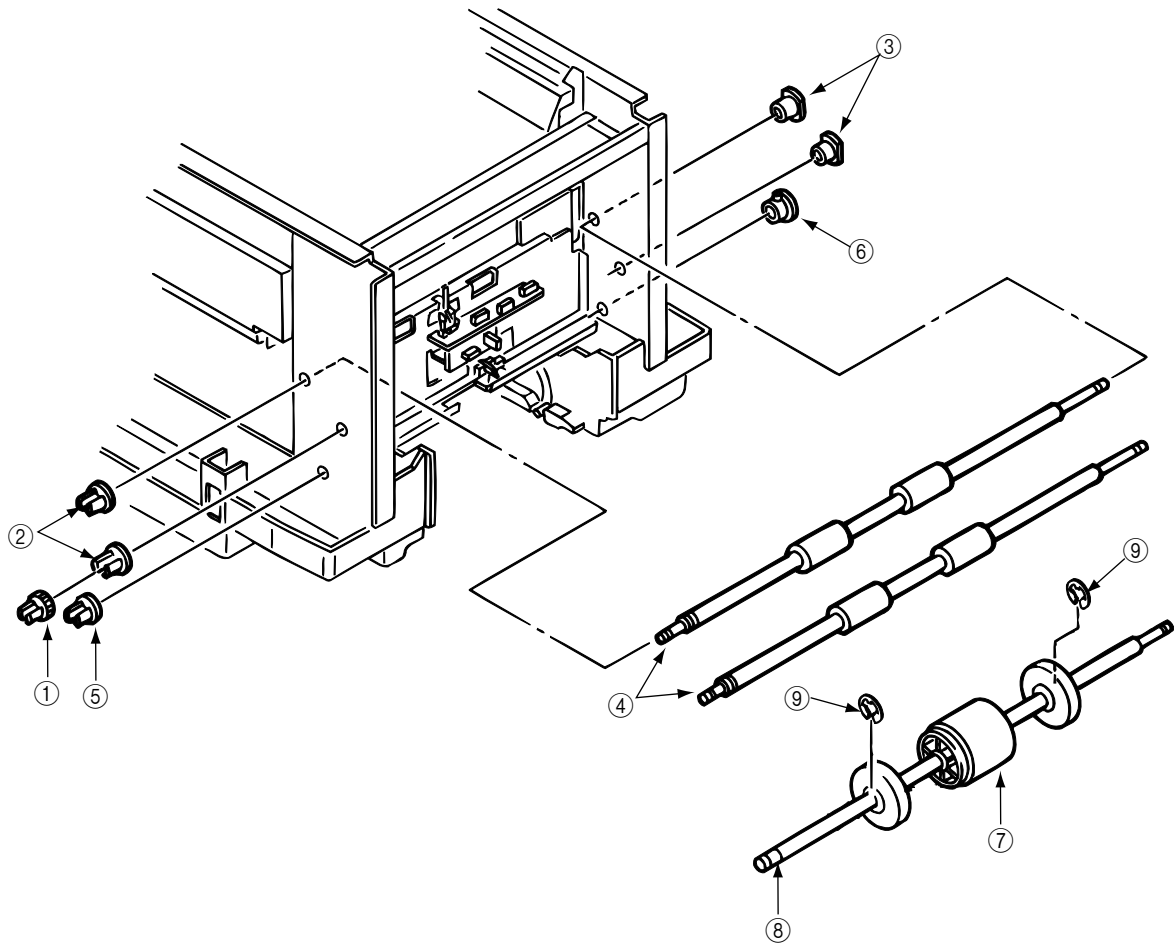


Figure 3.3.25 Roller Registration, Roller Assy Hopping

3.3.26 Roller Hopping

1. Remove the roller assy hopping. (See 3.3.25) and remove the 2 sub-roller hopping guide ③ . (Be careful not to lose the knock-pin which slips off together when removing the roller assy hopping.)
2. Detach the roller hopping ② from the shaft ①.

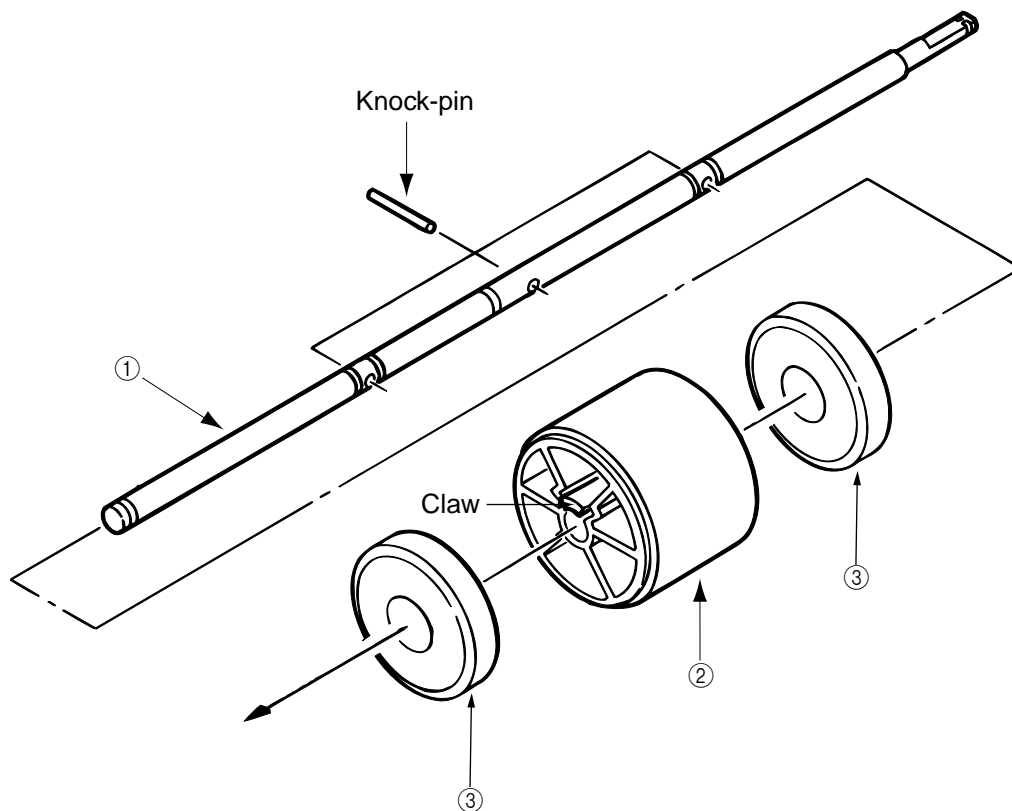


Figure 3.3.26 Roller Hopping

3.3.27 PXU PCB/PXM PCB, Lever Resist Sensor

Since the PXU PCB and PXM PCB are connected with each other via the cable, remove them at the same time.

1. Remove the guide paper input assy. (See 3.3.23)
2. Unscrew 4 screws ① and unplug the cable ②, then remove the PXU PCB ③ and PXM PCB ④ at the same time.
3. Remove the lever resist sensor ⑤ by releasing the engagement with the guide.

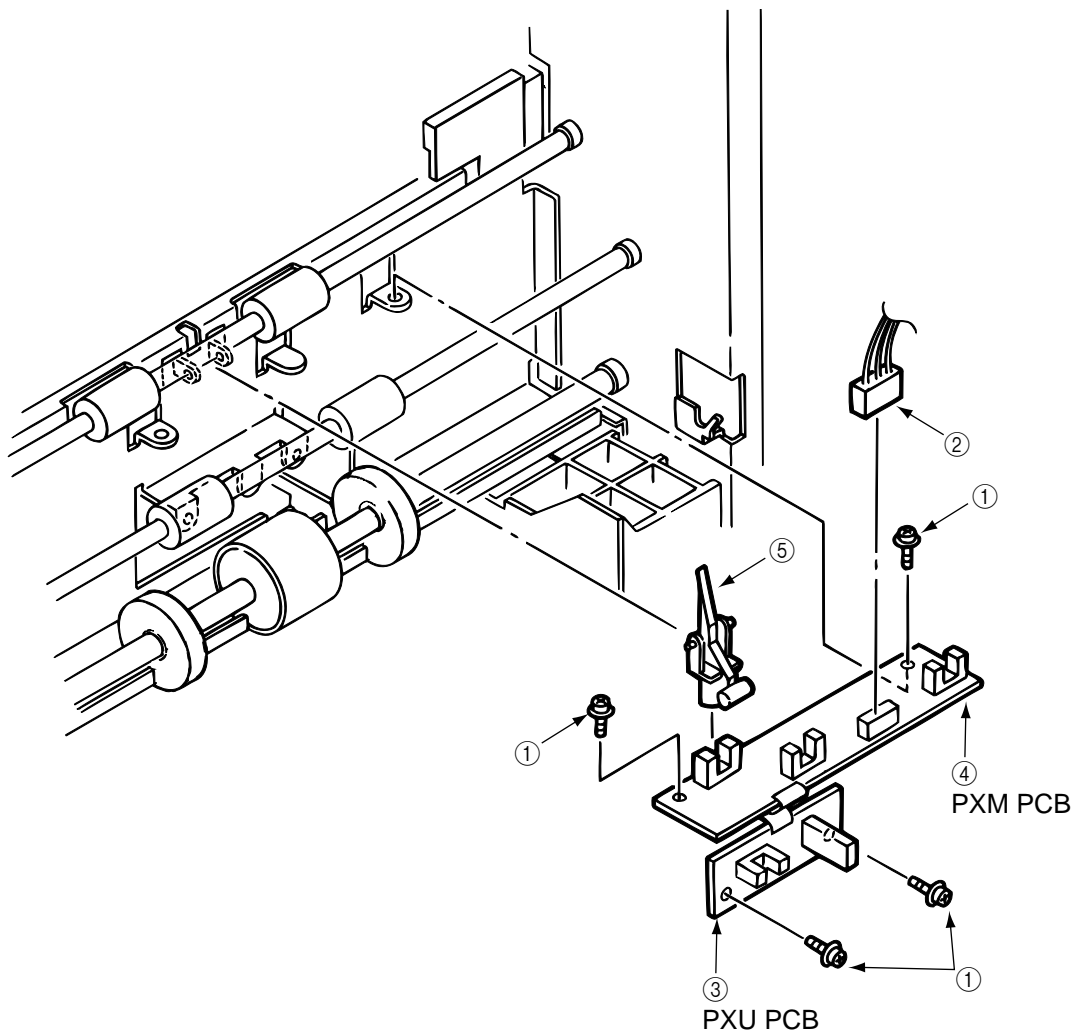


Figure 3.3.27 PXU PCB/PXM PCB, Lever Resist Sensor

3.3.28 Paper End Lever

1. Remove the guide paper input assy. (See 3.3.23)
2. Remove the paper end lever ① by releasing the engagement with the guide.

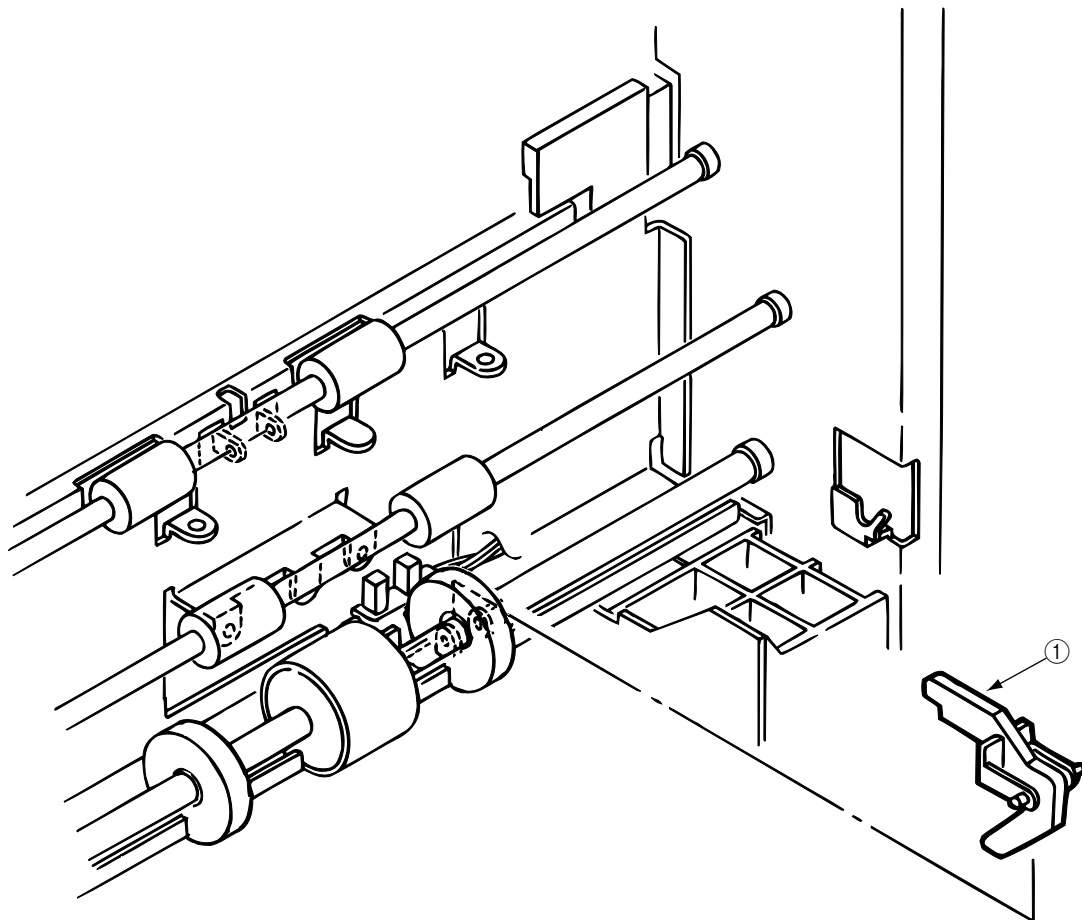


Figure 3.3.28 Paper End Lever

3.3.29 PCO PCB (Operator Panel)

1. Remove the cover assy side (R) and the cover assy OP panel. (See 3.3.8)
2. Unscrew 4 screws ① and unplug the operator panel cable ②.
6. Remove the PCO PCB ③ by releasing 6 claws.
(Be careful not to drop the LCD (Liquid Crystal Display) ④ and ⑤ which are detached together.)

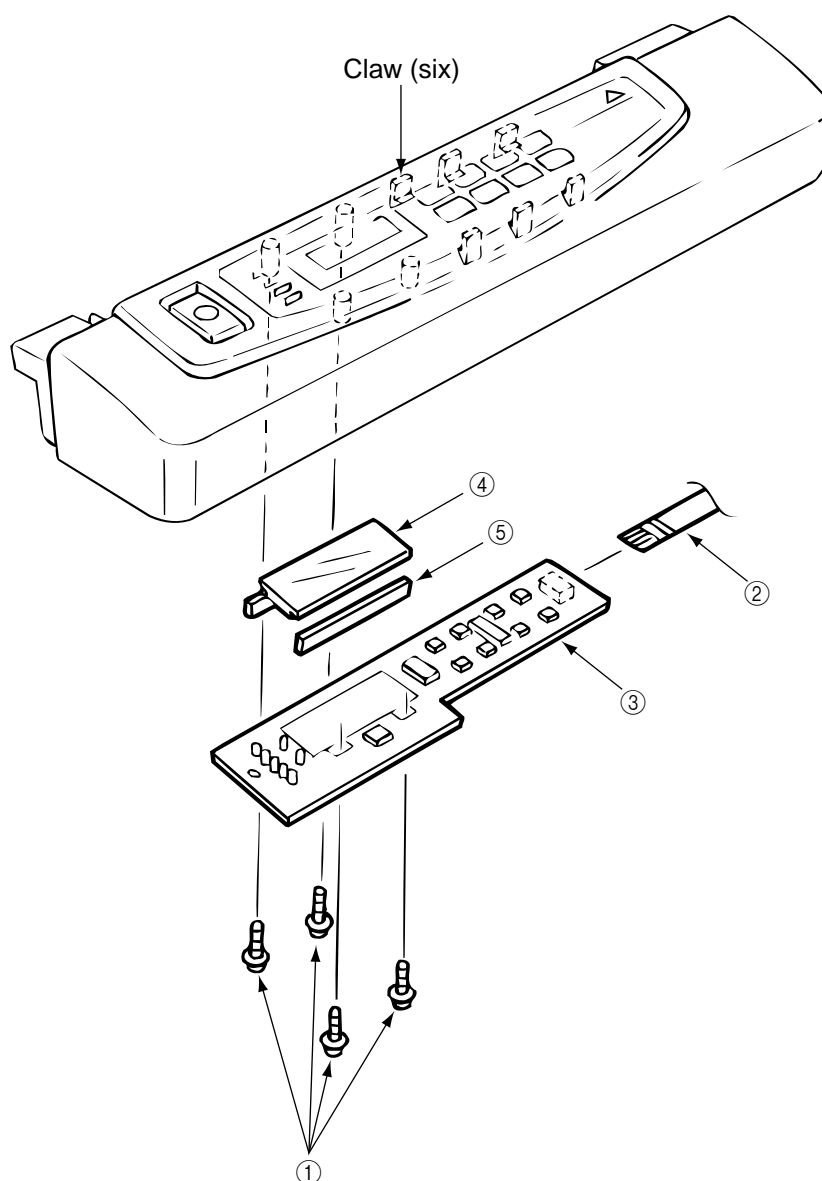


Figure 3.3.29 PCO PCB (Operator Panel)

3.3.30 Holder Gear Toner Assy

1. Remove the cover assy side (R), cover assy OP panel, cover front (R) and the cover rear (L). (See 3.3.8)
2. Unplug the cable ① and unscrew the screw ②, then remove the holder gear toner assy ③.

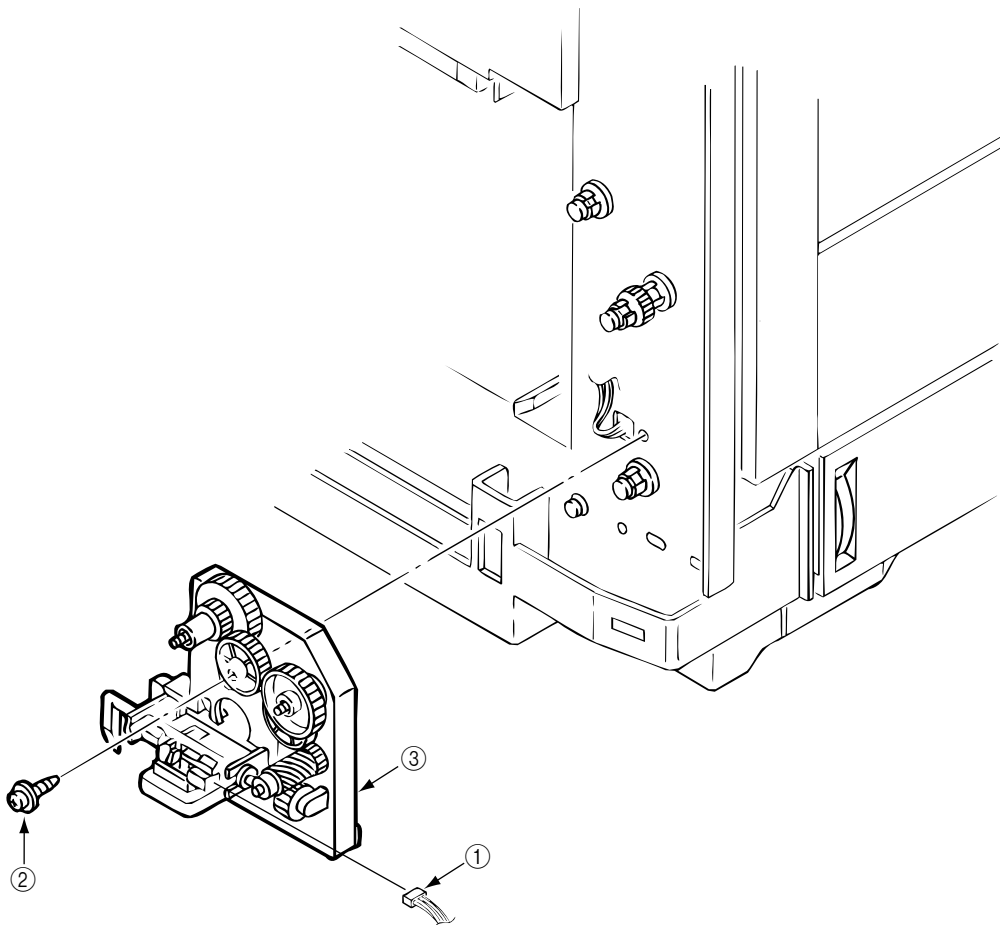


Figure 3.3.30 Holder Gear Toner Assy

3.3.31 Plate Latch Lever (FD), Spring Latch Lever (FD)

Remove the belt cassette assy.

1. Remove the cover assy side (R), cover assy OP panel, cover front (R) and the cover front (L). (See 3.3.8)
2. Open the cover CU. (See 3.3.11)
3. Unplug the cable ①.
4. Unscrew 4 screws ④ then remove the stay upper (front) ⑤.
5. Unscrew 2 screws ② then remove the bracket SW (side) ③.
6. Remove the plate latch lever (FD) ⑥ and spring latch lever (FD) ⑦ with the side frames spread. (Be careful not to spread the frames too much.)

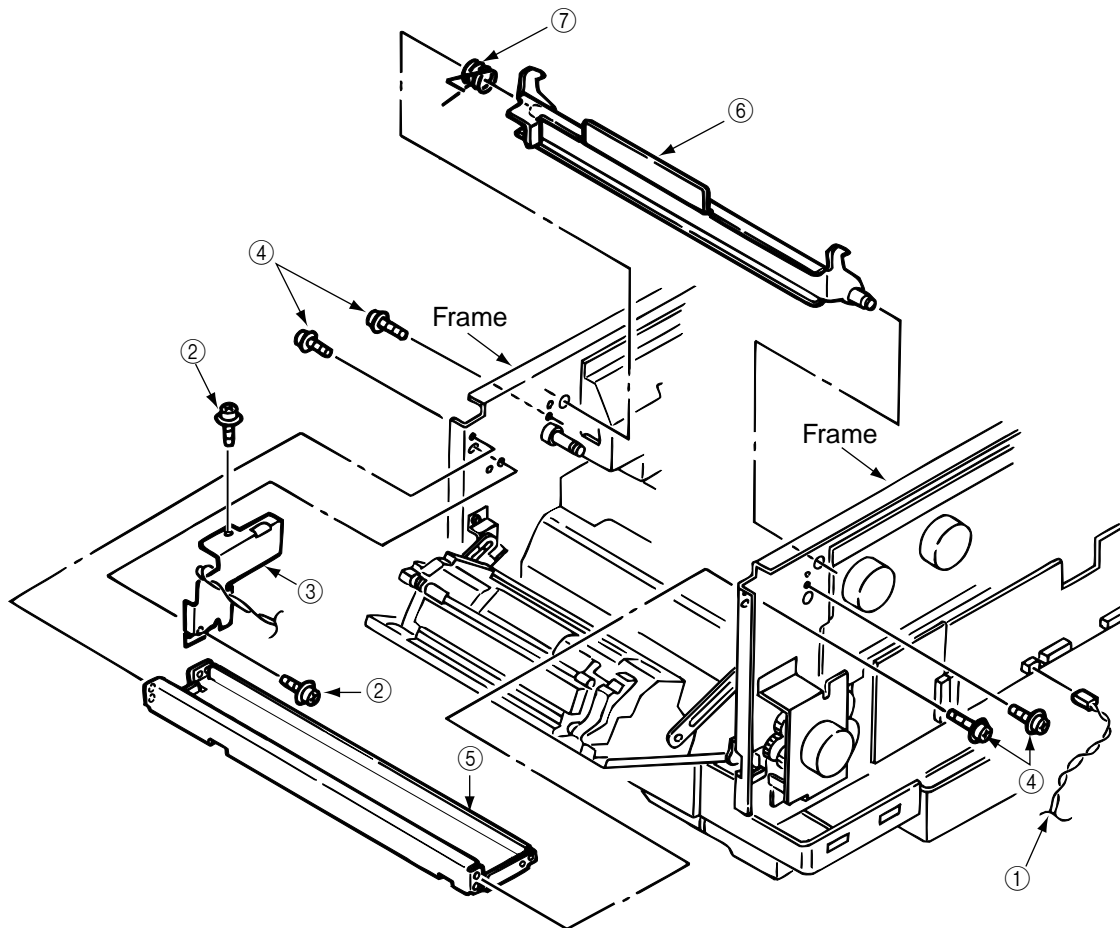


Figure 3.3.31 Plate Latch Lever (FD), Spring Latch Lever (FD)

3.3.32 Belt Cassette Assy

1. Open the Top cover.
2. Release the lock by drawing the cover knob then open the cover assy side (L).
3. Turn the waste toner box (box toner assy) ① to the left by pressing it down, then remove it.
4. Draw out the belt cassette assy ② by lifting it a little bit with its handle.

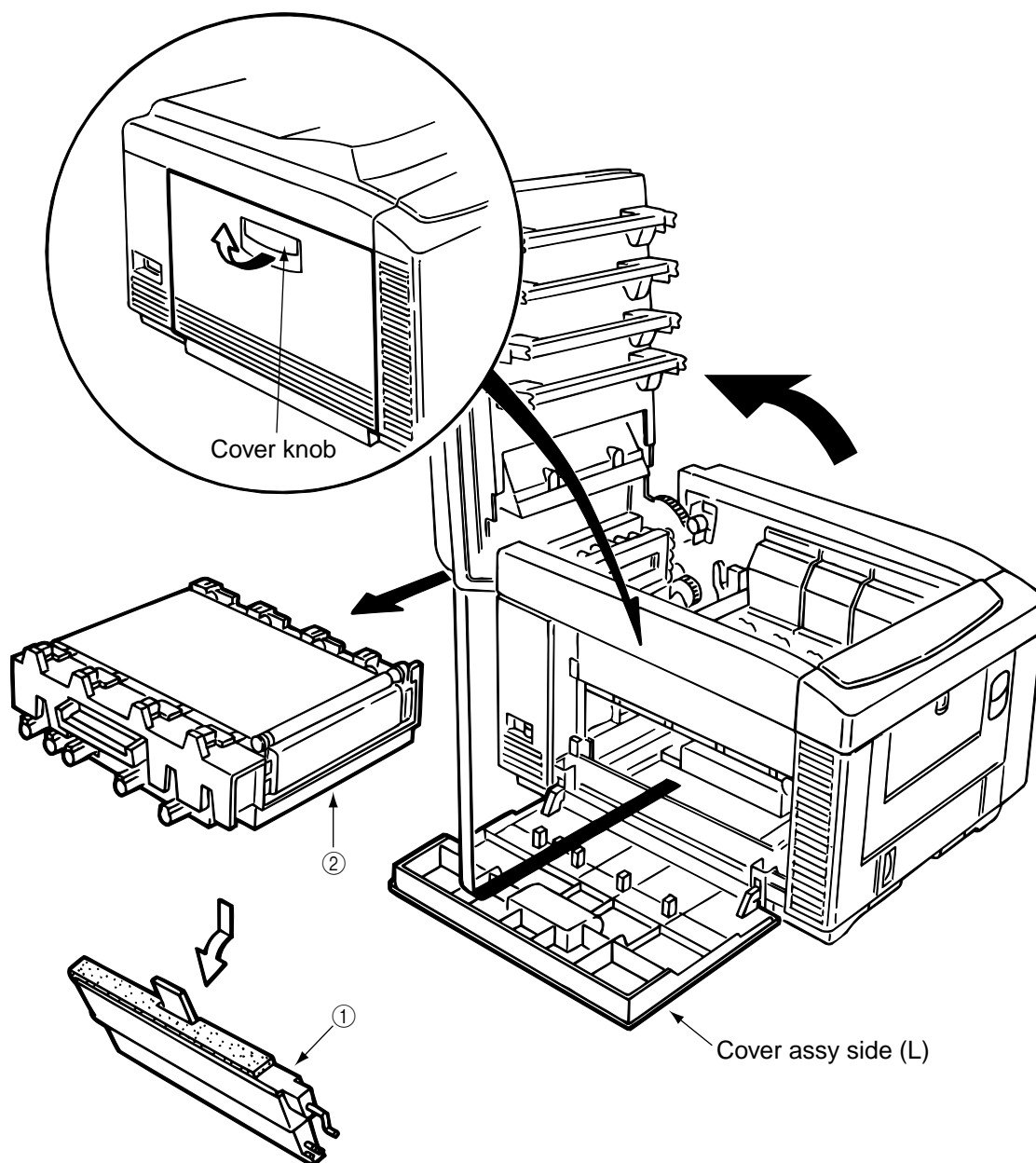


Figure 3.3.32 Belt Cassette Assy

3.3.33 High Voltage Power Supply Unit, Bracket HV (BT) Assy

1. Remove the belt cassette assy. (See 3.3.32)
2. Unscrew 2 screws ① with the stacker cover opened, then remove the plate HV ②.
3. Unplug the cable ③ and 7 codes ④.
4. Unscrew 2 screws ⑤ then remove the high voltage power supply unit ⑥.
5. Remove the bracket HV (BT) assy ⑦.

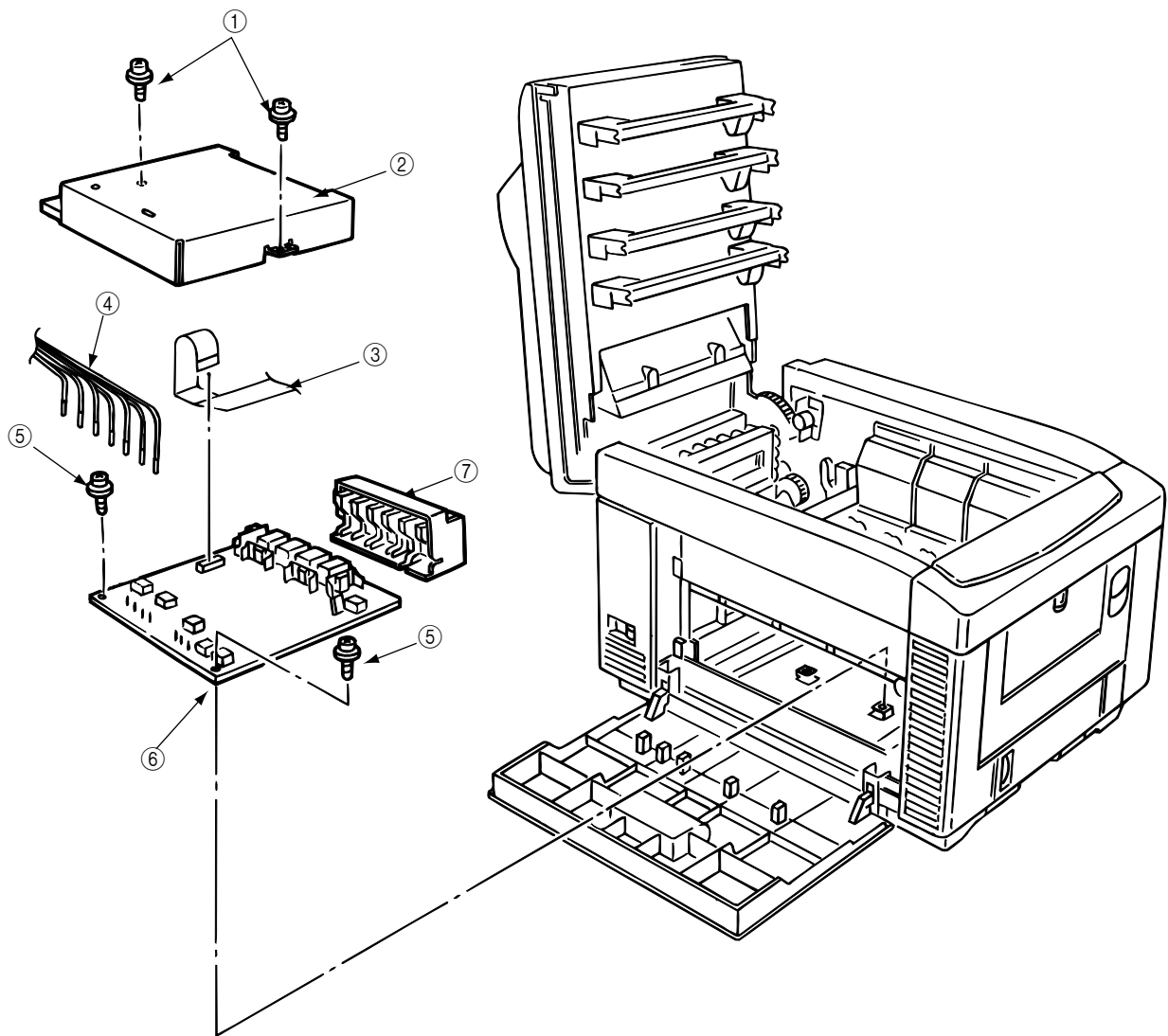


Figure 3.3.33 High Voltage Power Supply Unit, Bracket HV (BT) Assy

3.3.34 Eraser Bracket Assy, Eraser Bracket (KCM) Assy

1. Remove the belt cassette assy. (See 3.3.32.)
2. Open the stacker cover.
3. Remove four screws ⑤ and then remove the Plate Blind ⑥.

[Removing the eraser bracket assy]

4. Remove the screw ① and the connector ②.
5. Release the screw ⑦ and then remove the eraser bracket assy ③.

[Removing the eraser bracket (KCM) assy]

5. Remove the screw ① and the connector ②.
6. Release the lock of the claw then release the engagement with the bracket sensor T (KCM) (See 3.3.35 2.)
7. Release the screw ⑦ and then remove the eraser bracket (KCM) assy ④ and unplug the cable ② then remove the eraser bracket (KCM) assy.

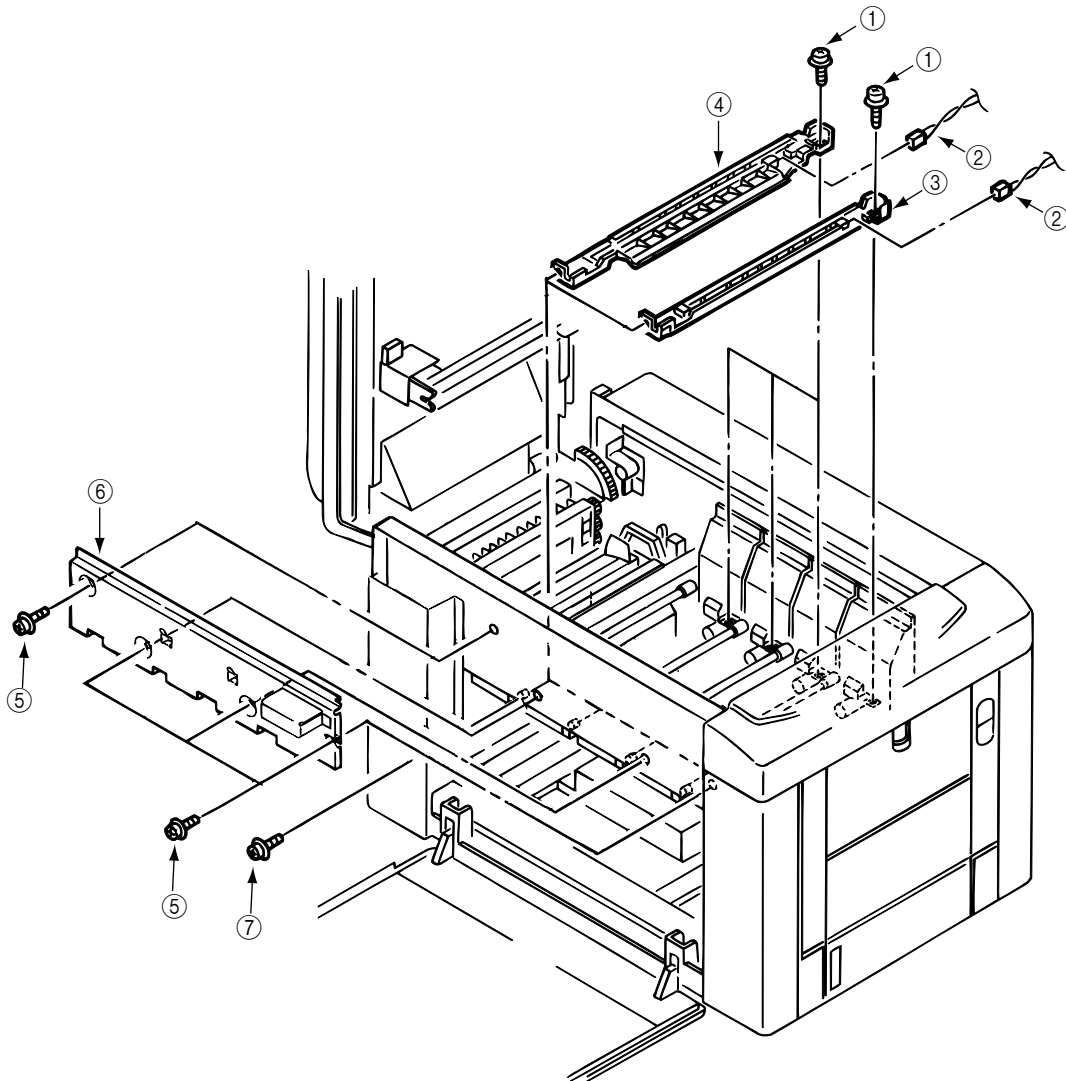


Figure 3.3.34 Eraser Bracket Assy, Eraser Bracket (KCM) Assy

3.3.35 Shaft Link

1. Remove the eraser bracket assy. (See 3.3.34.)
2. Remove the gear one-way (Z30). (See 3.3.14.)
3. Remove the E-ring ③ by sliding the sensor assy T (KCM) ① and bracket sensor T (KCM) ② together in the arrow (A) direction. When removing shaft (K) assy, remove 3 screws then remove the Heat Sink-801 ⑫. Release the lock of the claw then remove the plate shield Heat ⑬ by sliding .
4. Release the engagement between the lever Up/Dn and boss A of the lever link (R) ⑤ by sliding the spring support (R) ④, lever link (R) ⑤ and the bearing ⑥ together in the arrow (B) direction.
(Keep on sliding until the lever link (R) ⑤ reaches the end of D-cut part of the shaft link ⑦.)
5. Draw out the entire shaft link ⑦ by pressing it in the arrow (C) direction and turning its left side under the contact (BL L) assy.
6. Detach the sensor assy T (KCM) ①, bracket sensor T (KCM) ②, spring support (R) ④, lever link (R) ⑤ and the bearing ⑥ from the shaft link ⑦.
7. Remove 2 E-rings ⑧ then remove the spring support (L) ⑨ and lever link (L) ⑩.

[Notice for mounting]

- Engagement between the lever Up/Dn and boss A of the lever link (R) ⑤:
Mount the spring support (L) ⑨ and lever link (L) ⑩ in the predetermined positions, then clamp the boss A of lever link (R) ⑤ with the lever Up/Dn by adding rotating power on the spring support (L) ⑨ by rotating the shaft link ⑦.
- Mounting of the spring support (R) ④:
Clamp the spring support (R) ④ at the predetermined positions in the lever link (R) ⑤ and the contact BKT (R).

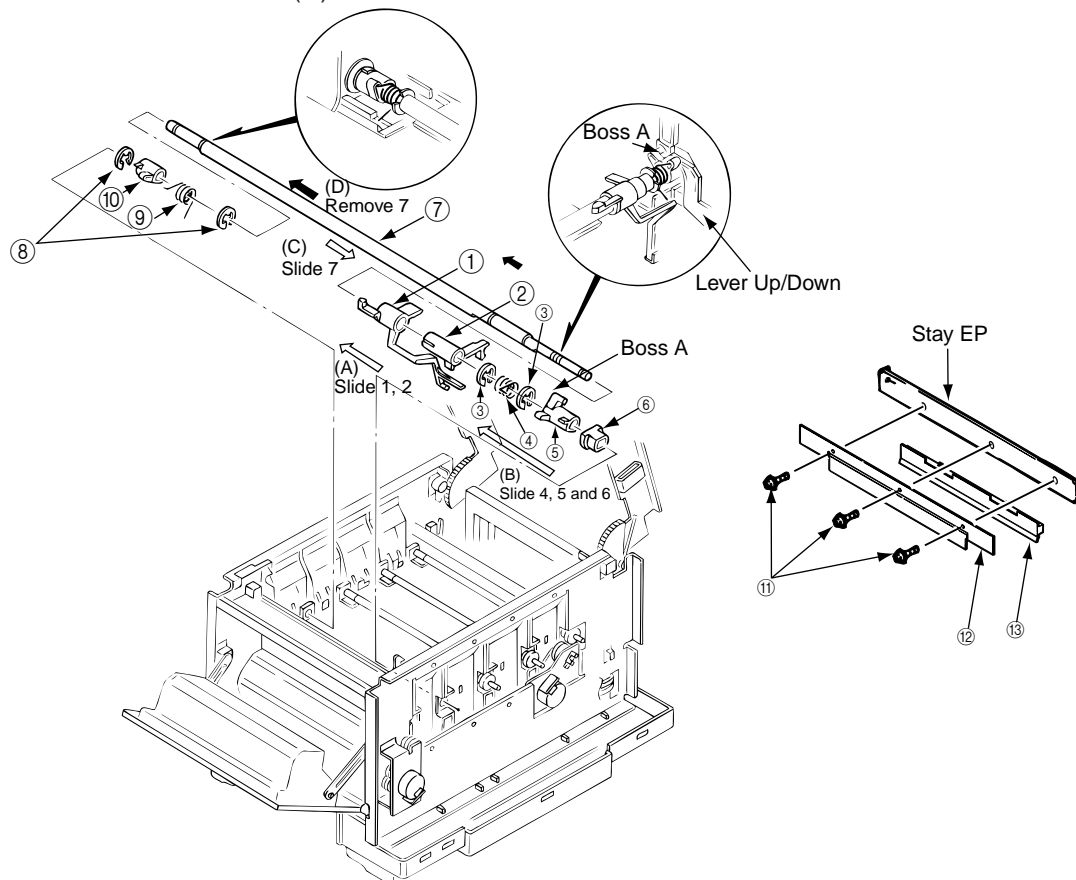


Figure 3.3.35 Shaft Link

3.3.36 Contact (BL-R) Assy, Contact (CL-R) Assy

1. Remove the gear one-way (Z30). (See 3.3.14)
2. Remove the motor assy BT. (See 3.3.15)
3. Remove the high voltage power supply unit. (See 3.3.33)
4. Remove the shaft link. (See 3.3.35)

[Removal of the contact (BL-R) assy]

5. Unscrew 2 screws ① and unplug the cable ②, then remove the contact (BL-R) assy ③.

[Removal of the contact (CL-R) assy]

6. Unscrew 2 screws ④ then remove the contact (CL-R) assy ⑤.

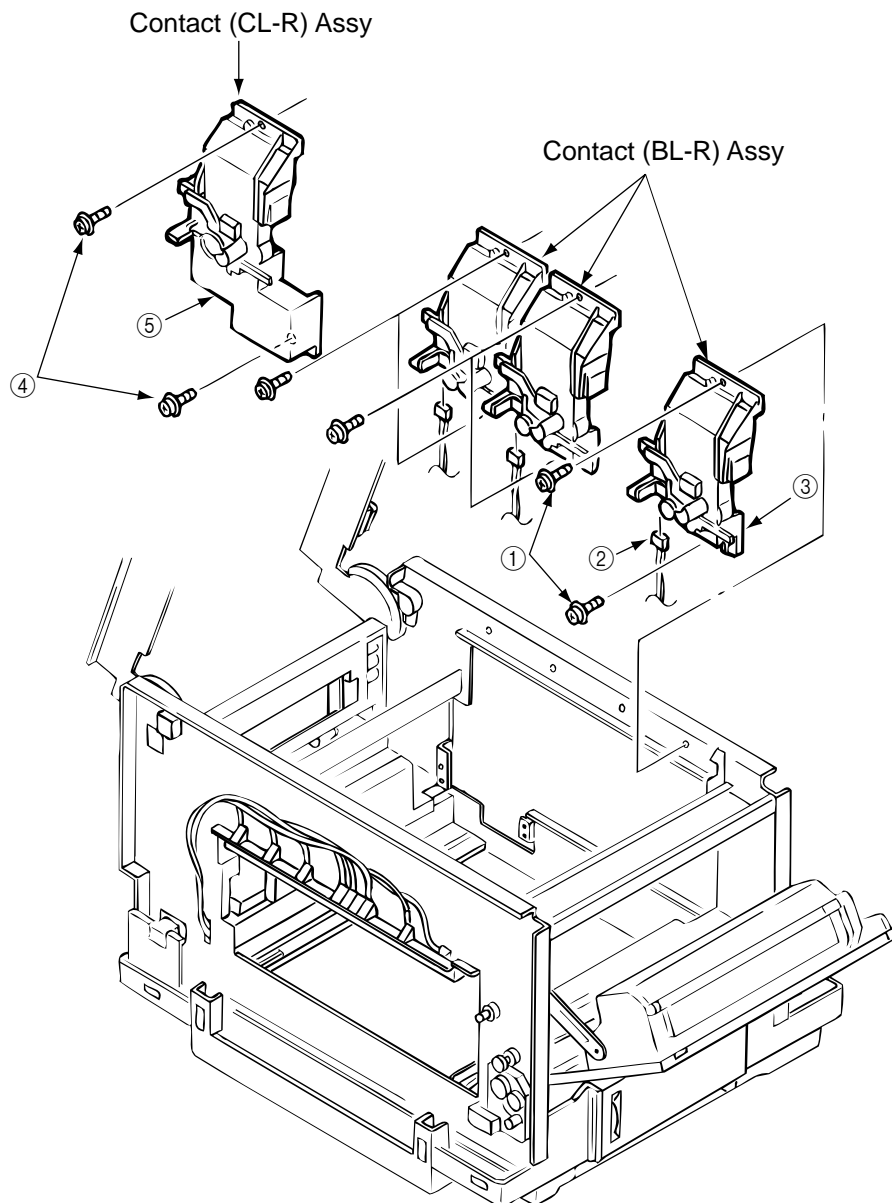


Figure 3.3.36 Contact (BL-R) Assy, Contact (CL-R) Assy

3.3.37 Contact (BL-L) Assy, Contact (CL-L) Assy

1. Remove the shaft link. (See 3.3.35)

[Removal of the contact (BL-L) assy]

2. Unscrew 2 screws ① then remove the contact (BL-L) assy ②.

[Removal of the contact (CL-L) assy]

3. Unscrew 2 screws ③ then remove the contact (CL-L) assy ④.

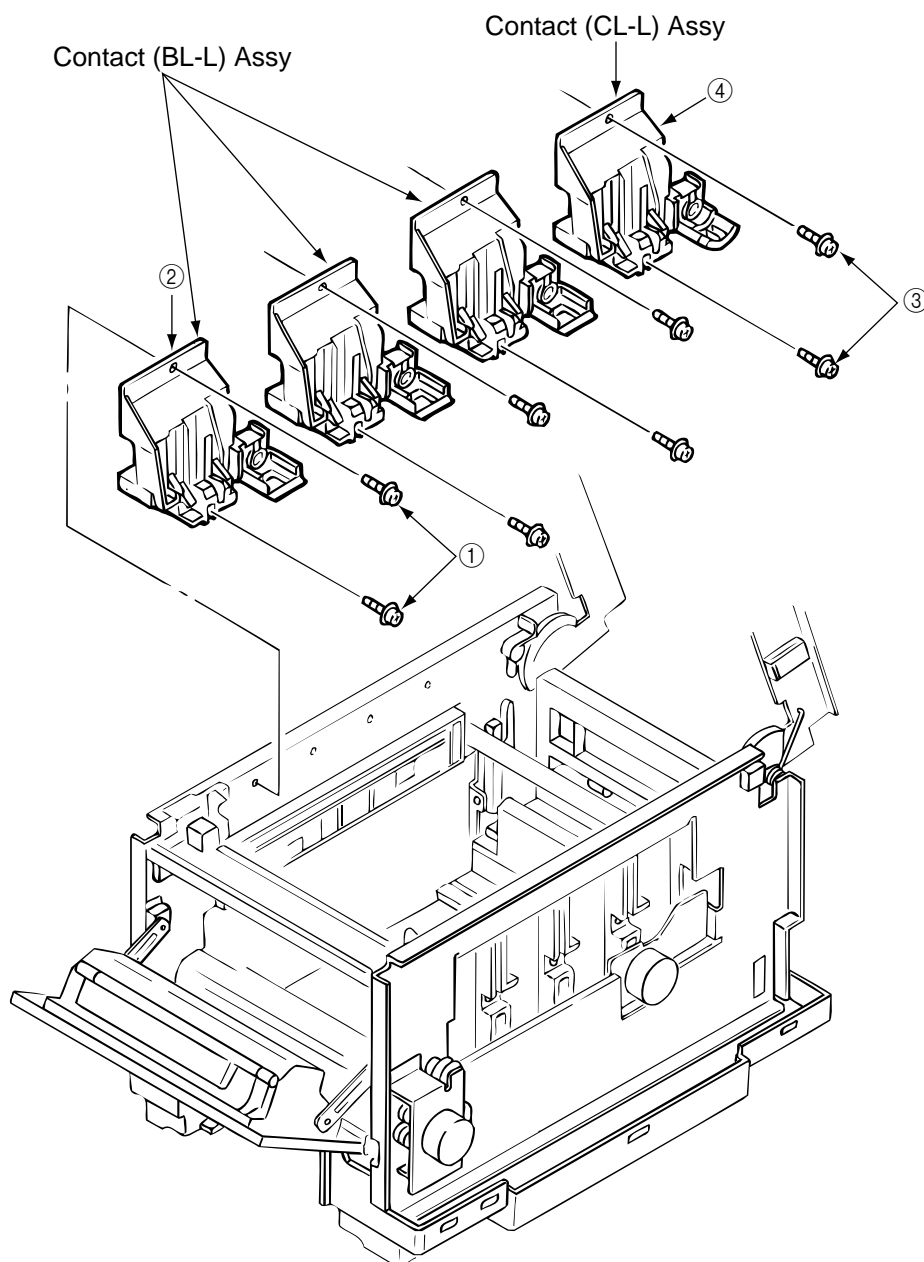


Figure 3.3.37 Contact (BL-L) Assy, Contact (CL-L) Assy

3.3.38 Contact SB Assy

1. Remove the contact (BL-L) assy and contact (CL-L) assy. (See 3.3.37)
2. Unscrew 3 screws ① then remove the plate blink ②.
3. Unplug 7 codes ③.
4. Unscrew 3 screws ④ then remove the contact SB assy ⑤.

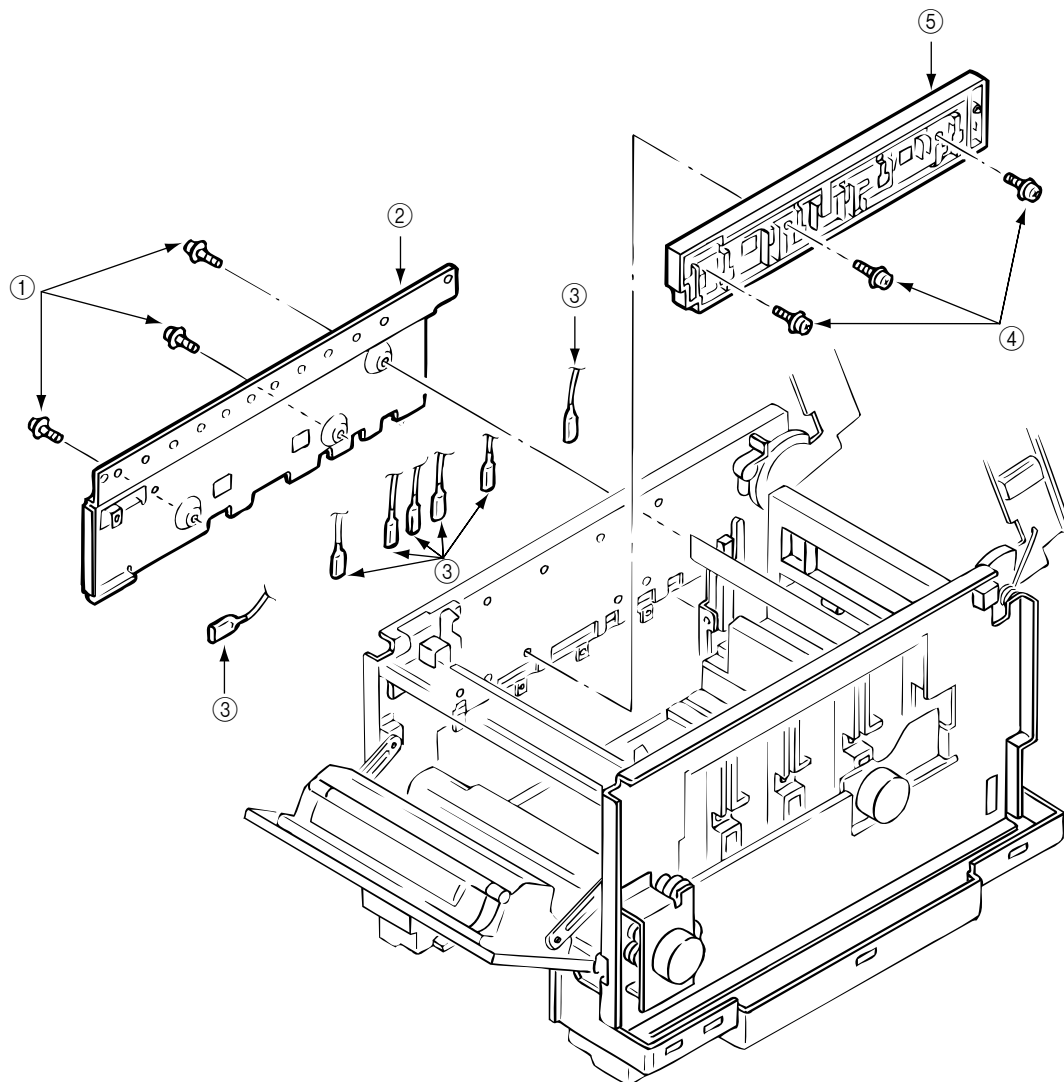


Figure 3.3.38 Contact SB Assy

3.3.39 PXC PCB

1. Remove the contact (BL-R) assy and contact (CL-R) assy. (See 3.3.36)
2. Remove the contact (BL-L) assy and contact (CL-L) assy. (See 3.3.37)
3. Remove the hopping motor. (See 3.3.19)
4. Remove the motor assy BT. (See 3.3.15)
5. Remove the gear heat assy. (See 3.3.12)
6. Remove the roller assy hopping. (See 3.3.25)
7. Remove the holder gear toner assy. (See 3.3.30)
8. Remove the high voltage power supply unit. (See 3.3.33)
9. Unplug the inlet AC. (See 3.3.16)
10. Unscrew 9 screws ① then remove the guide cassettes (L) ② and (R) ③ together.
11. Unscrew the screw ④ then remove the switch ⑤.
12. Unscrew the screw ⑥ then remove the PXC PCB ⑦.

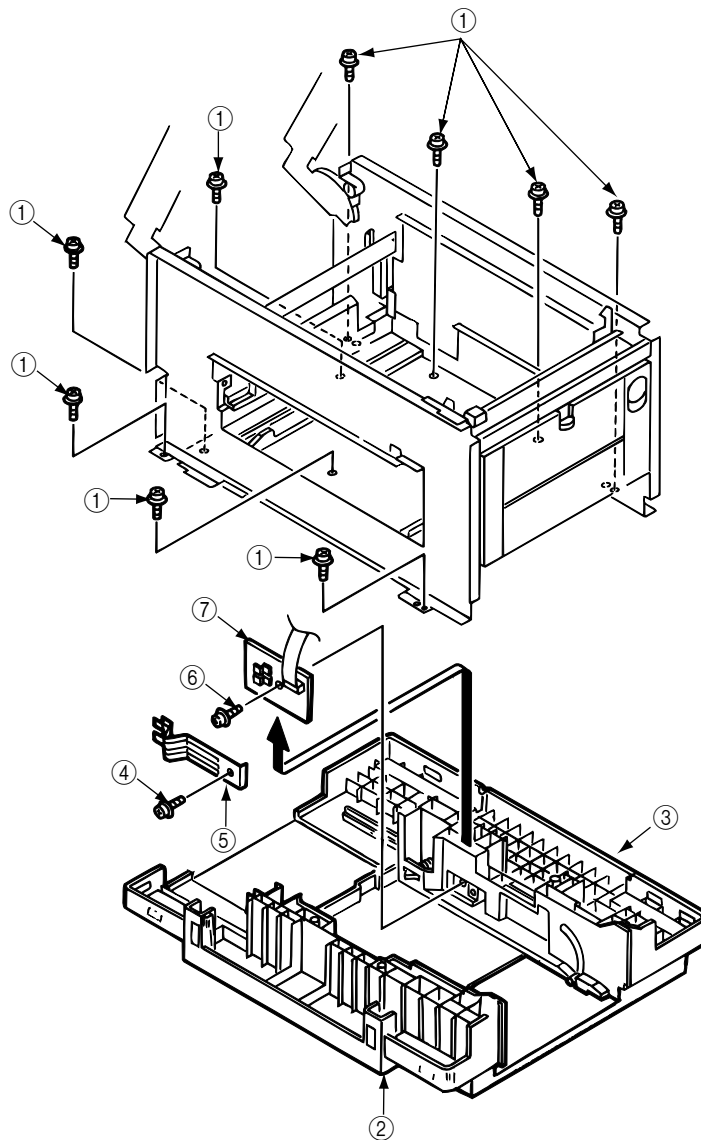


Figure 3.3.39 PXC PCB

3.3.40 Heat Unit Assy

1. Open the stacker cover.
2. Release the lock by turning down the lever lock heat guides (blue) on both sides, then lift the heat unit assy ① and remove it.

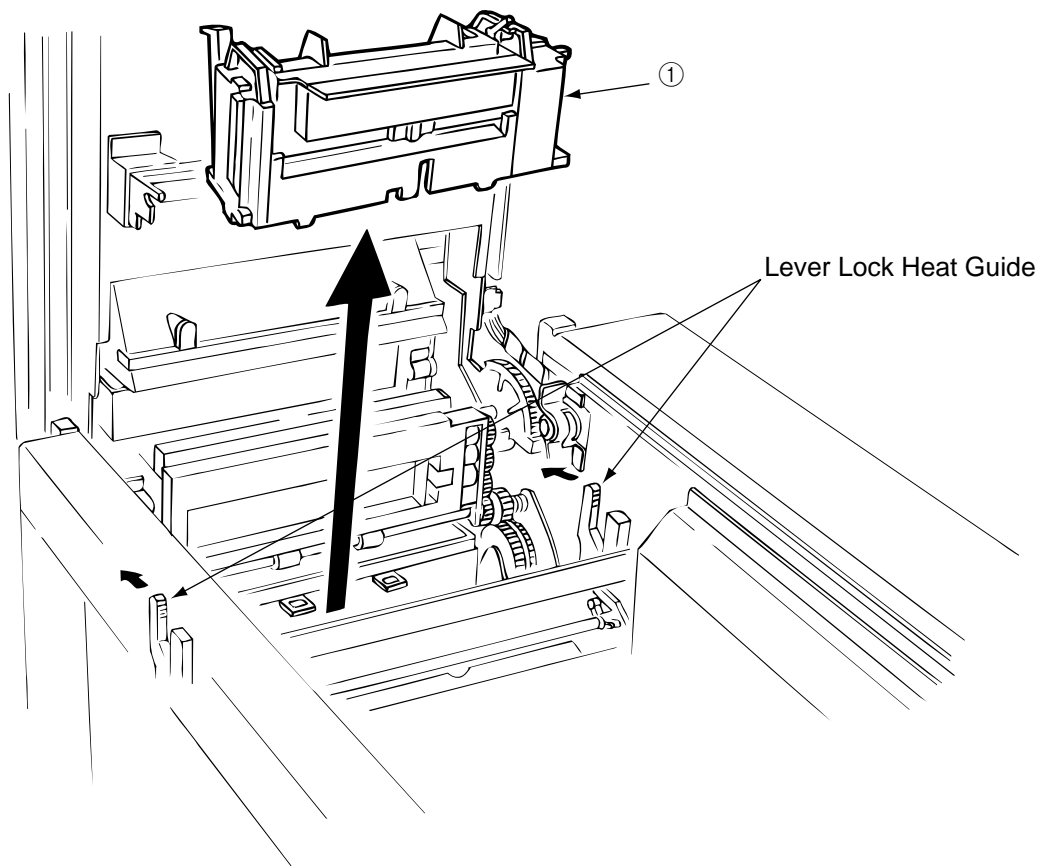


Figure 3.3.40 Heat Unit Assy

3.3.41 Oil Roller Assy

1. Remove the heat unit assy. (See 3.3.40)
2. Release the lock by turning down the lever in the arrow (A) direction, then slide the oil roller assy ① with its right side lifted and remove it.

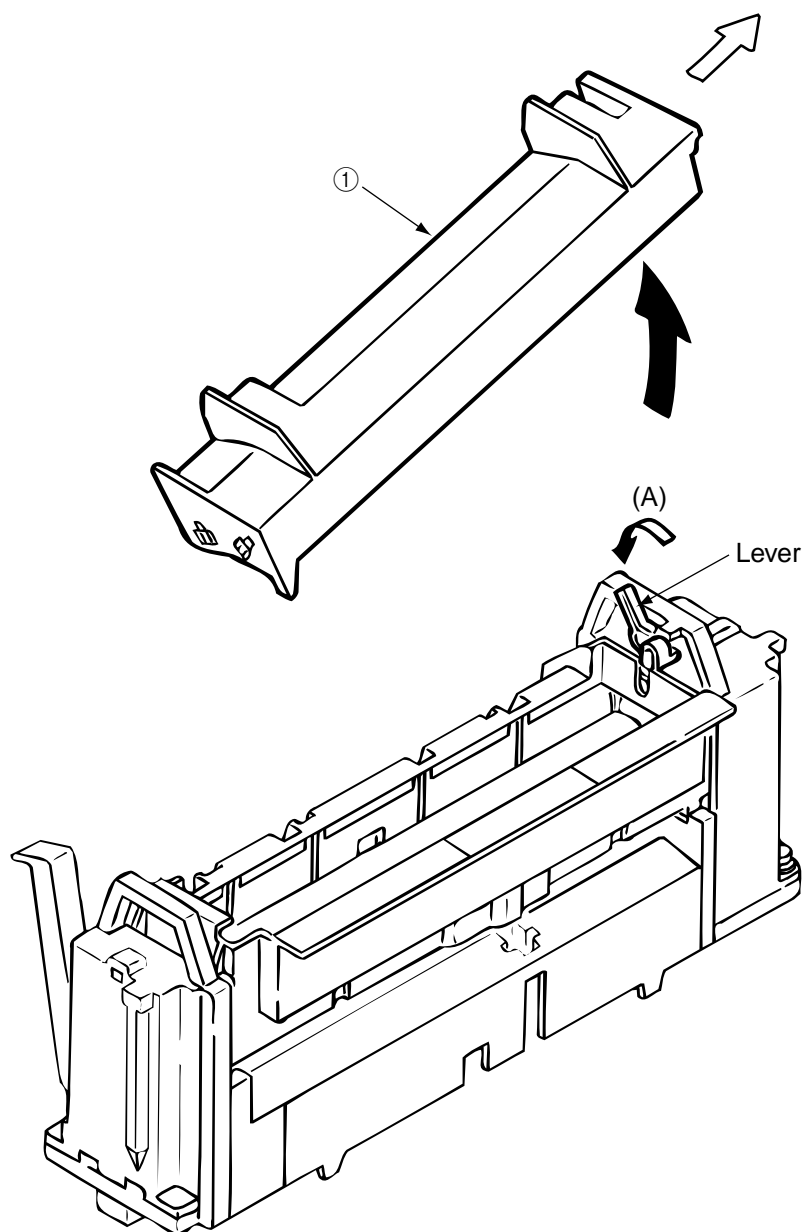


Figure 3.3.41 Oil Roller Assy

3.3.42 Lever Lock Heat (L)/(R), Guide Side Heat, Spring Lock

Removing methods for right side and left side of each part are the same. Here describes the method for right side.

1. Remove the heat unit assy. (See 3.3.40)
2. Unscrew 2 screws ① then remove the guide side heat ②.
3. Remove the E-ring ③ then lever lock heat (R) ④.
(Be careful not to lose the spring lock ⑤ which slips off together.)

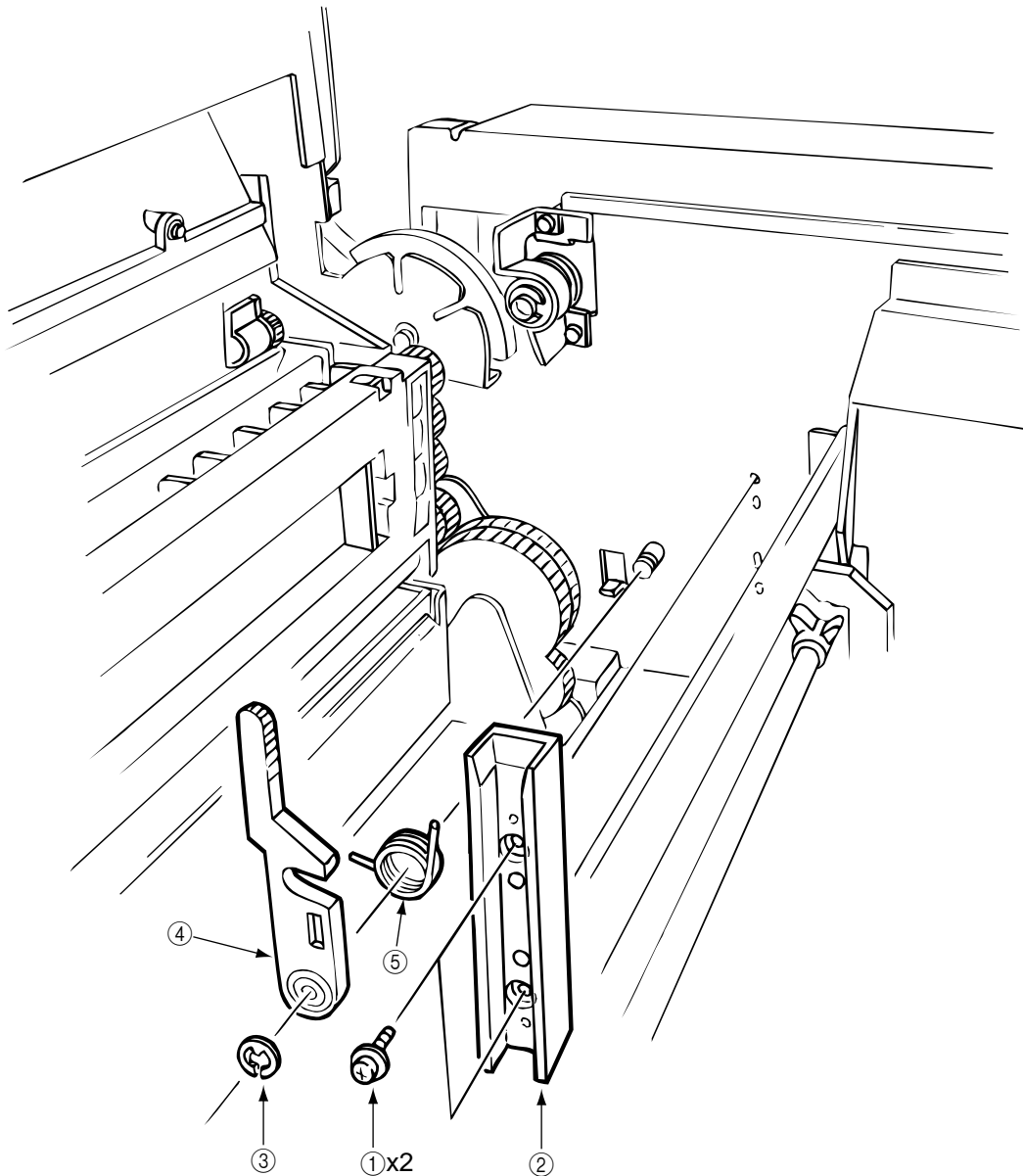


Figure 3.3.42 Lever Lock Heat (L)/(R), Guide Side Heat, Spring Lock

3.3.43 PXL PCB

1. Remove the paper eject assy. (See 3.3.3)
2. Remove the belt cassette assy. (See 3.3.32)
3. Remove the heat unit assy. (See 3.3.40)
4. Unplug the cable ① and the screw ②, then remove PXL PCB ③.
5. Release the lock of the claw then remove the sensor cover ④.

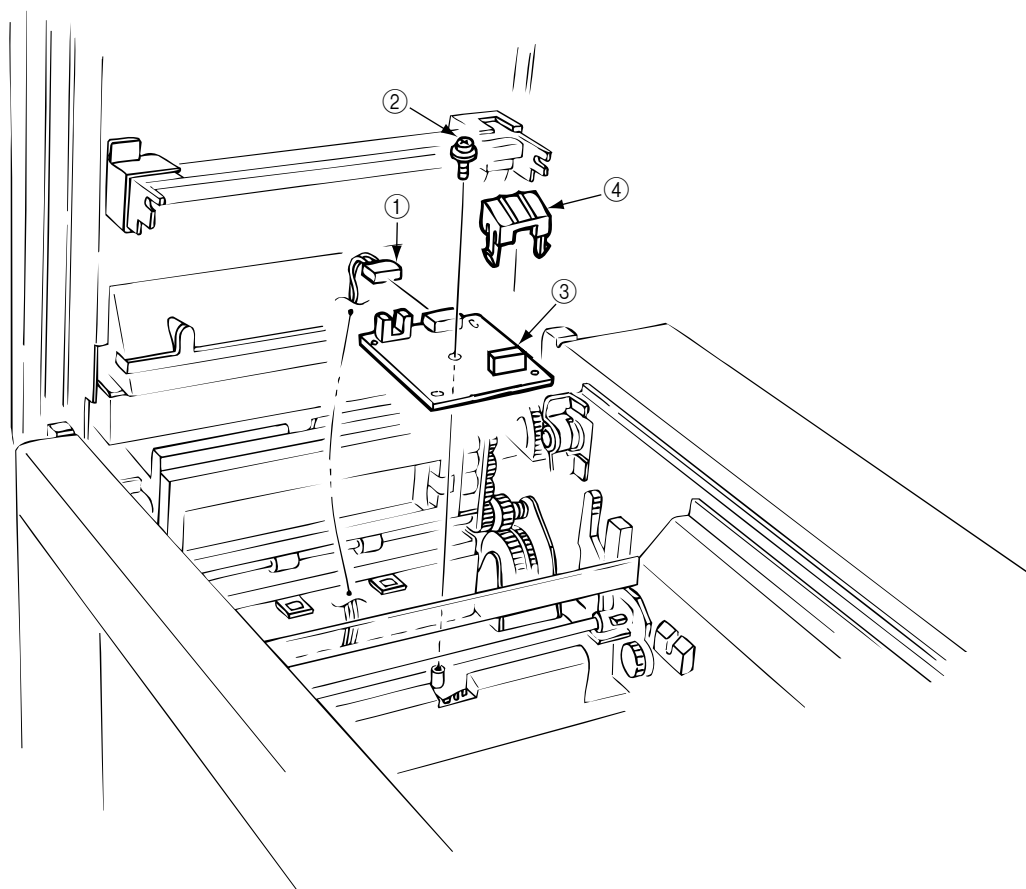


Figure 3.3.43 PXL PCB

3.3.44 Heat Unit Guide Assy

1. Remove the cover assy rear. (See 3.3.1)
2. Remove the paper eject assy. (See 3.3.3)
3. Remove the gear heat assy. (See 3.3.12)
4. Remove the belt cassette assy. (See 3.3.32)
5. Open the stacker cover and remove the heat unit assy. (See 3.3.40)
6. Unscrew 4 screws ① then remove the heat unit guide assy ②.

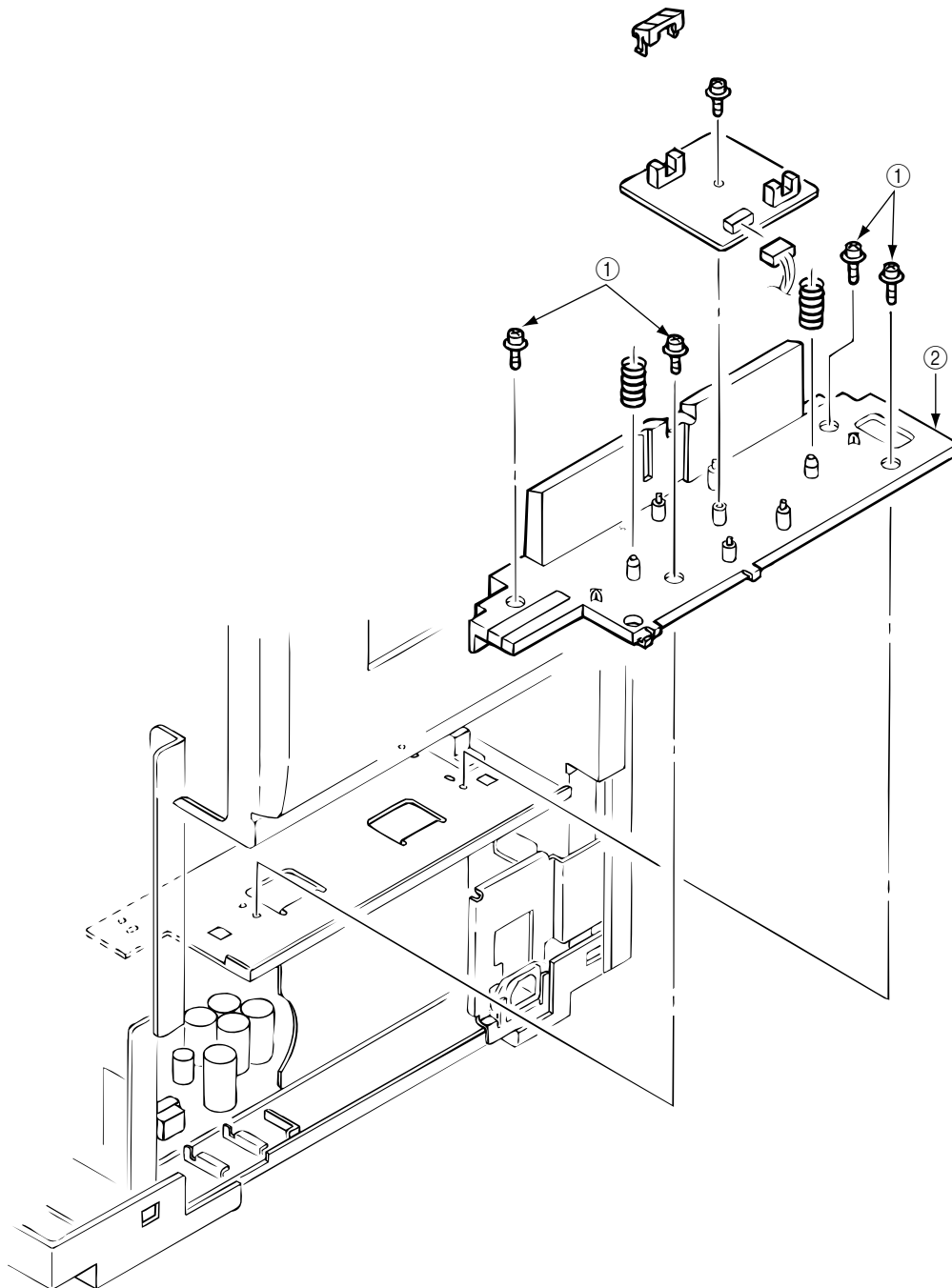


Figure 3.3.44 Heat Unit Guide Assy

3.3.45 Holder LED Assy, LED Head

Remove the belt cassette assy and the heat unit assy.

1. Unplug the cable ①.
2. Remove the LED head ③ by spreading the holder LED assy ② a little bit.
(Be careful not to lose the spring ④ which slips off together.)
3. Remove the holder LED assy ② by spreading the A-part of the guide holder a little bit with a flat blade screwdriver.
(Be careful not to lose the spring ⑤ which slips off together.)

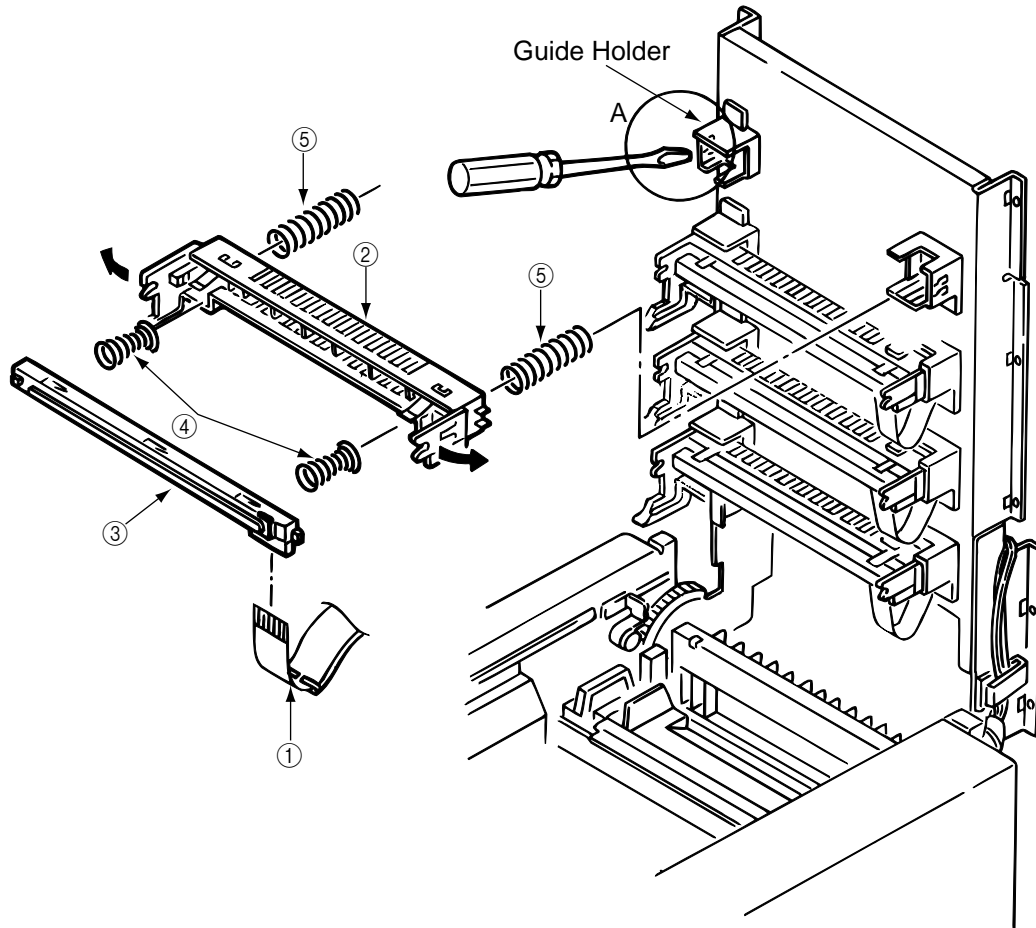


Figure 3.3.45 Holder LED Assy, LED Head

4. ADJUSTMENTS

Adjustments are carried out by key operations on the operator panel, by software operation panel, and by EEPROM of PU (PXS-PCB) setting.

This page printer supports three maintenance modes. Select and set a maintenance mode fit for the adjustment.

4.1 Maintenance Modes and Their Functions

4.1.1 User maintenance mode

To set the user maintenance mode, turn on the power switch of the page printer while pressing on the MENU key.

- Functions
 - Menu reset
 - Drum counter reset (YELLOW, MAGENTA, CYAN, BLACK)
 - Belt count reset
 - Resource save area
 - Operator panel menu disable
 - Y adjust
 - SETTING
 - Hex dump
 - FUSER COUNT RESET
 - Oil roller count reset
 - Receive buffer size
 - X adjust
 - Darkness (YELLOW, MAGENTA, CYAN, BLACK)
 - Color Reg Adjust Execute
- (a) Menu reset
 - ① Resets all Menu Level 1 settings to the default settings (which have been factory-set).
 - ② Resets all executable Emulation menu items (including options) to factory-set default emulation items.
- (b) Hex dump
 - ① Receives data from the host computer and dumps it in a hexadecimal format.
 - ② When one page of data or more comes from the host, printing automatically starts. To print out data of less than one page, press the ONLINE key to set the offline state and press the EJECT key. Printing starts.
 - ③ To exit this mode, shut off power to the page printer. (This is the only one way to exit this mode.)
- (c) Drum counter reset (for yellow, magenta, cyan and black)
 - ① Used to reset the drum life after the EP drum is replaced.
 - ② After drum-counter resetting is made, the page printer does not enter the operation mode automatically.

- (d) Fuser count reset
Resets the fuser life after the fuser unit is replaced.
- (e) Belt count reset
Resets the belt life after the belt unit is replaced.
- (f) Oil roller count reset
Resets the oil roller life after the oil roller unit is replaced.
- (g) Resource save area
Sets the resource saving area. This menu item appears when the option PS SIMM and RAM increases, the selectable size will also increase (When adding a RAM over 24Mbytes, the selection can be made up to 22.5Mbytes). The size upon auto will also increase if the size of the add-on RAM increases.
- (h) Receive buffer
Sets the receive buffer. The data transmission time from the upper command will decrease when set to a high value, but memory overflow will occur easier. Memory will be restructured with this change, and the contents of all download fonts, PCL macro, and PodtScript will be lost.
- (i) Operator panel menu disable
Enables or disables the menu functions (Menu1, Menu2, Tray Type, Power Save, and Paper Size) of the operator panel.
- (j) X adjust
 - ① Corrects the position of the whole print image so that it may be perpendicular to the movement of paper (at intervals of 0.25mm).
 - ② The print image exceeding the specified printable area is clipped.
- (k) Y adjust
 - ① Corrects the position of the whole print image so that it may be parallel to the movement of paper (at intervals of 0.25mm).
 - ② The print image exceeding the specified printable area is clipped.
- (l) Darkness (Yellow, Magenta, Cyan and Black)
Sets the printout density of each color.
- (m) SETTING
Used for fine adjustments in the case that operational environment, the use of special papers, etc may produce a prominent blur and dispersion on the resulted pages. Executes a PQ correction for continuous use of special environment and media. When any scattered printing or snow flake-like printing is output, it should be decremented. When the printing becomes scratchy, it should be incremented. Press the ENTER key to write the setting to the EEPROM.
- (n) Color Register Adjust Execute
Sets values for correcting X-axis, diagonal, and Y-axis deviations of the LED heads (yellow, magenta, and cyan) relative to black. The tandem-type page printer OKIPAGE 8c is equipped with an array of image drum (I/D) units which cannot be free from generation of color deviations. The color deviations are main scanning, sub-scanning, and diagonal deviations. These mechanically-caused color deviations are corrected electronically.

User maintenance mode memu system

Category	Selection	DF	After pressing <u>ENTER</u> key	After completing the process
MENU RESET			MENU RESETTING	MENU RESET
HEX DUMP			ON-LINE HEX DUMP	
YELLOW DRMCNT RESET			YELLOW DRMCNT RESETTING	YELLOW DRMCNT RESET
MAGENTA DRMCNT RESET			MAGENTA DRMCNT RESETTING	MAGENTA DRMCNT RESET
CYAN DRMCNT RESET			CYAN DRMCNT RESETTING	CYAN DRMCNT RESET
BLACK DRMCNT RESET			BLACK DRMCNT RESETTING	BLACK DRMCNT RESET
FUSER COUNT RESET			FUSER COUNT RESETTING	FUSER COUNT RESET
BELT COUNT RESET			BELT COUNT RESETTING	BELT COUNT RESET
OIL ROLLER COUNT RESET			OIL ROLLER COUNT RESETTING	OIL ROLLER COUNT RESET
RESOURCE SAVE	AUTO OFF 400KB 900KB 1.6MB 2.5MB • • • 19.6MB 22.5MB	*		
RECEIVE BUFFER	AUTO OFF 8KB 20KB 50KB 100KB 1MB	*		
OP MENU	ENABLE DISABLE	*	SETTING EEPROM	
X ADJUST	0 mm +0.25 mm +0.50 mm ~ +2.00 mm -2.00 mm -1.75 mm ~ -0.25 mm	*	SETTING EEPROM	

Category	Selection	DF	After pressing [ENTER] key	After completing the process
Y ADJUST	0 mm +0.25 mm +0.50 mm ~ +2.00 mm -2.00 mm -1.75 mm ~ -0.25 mm	*	SETTING EEPROM	
YELLOW DARKNESS	0 +1 +2 -2 -1	*	SETTING EEPROM	
MAGENTA DARKNESS	0 +1 +2 -2 -1	*	SETTING EEPROM	
CYAN DARKNESS	0 +1 +2 -2 -1	*	SETTING EEPROM	
BLACK DARKNESS	0 +1 +2 -2 -1	*	SETTING EEPROM	
SETTING	0 +1 +2 -2 -1	*		
COLOR REG ADJUST EXECUTE	Refer 4.2.2 color deriation correction			

4.1.2 System maintenance mode

To set the system maintenance mode, turn on the power switch of the page printer while pressing on the Recover key.

Note: The system maintenance mode is hidden and not available to the user.

To exit this mode, press the ONLINE switch except during rolling ASCII continuous printing. Then the RUN mode is set.

In the system maintenance mode, the category changes each time the MENU switch is pressed. The last category wraps around to the first category. The system maintenance mode supports the following functions:

- Page count display
- Rolling ASCII continuous printing
- HSP ERROR recovery
- HSP ERROR count reset
- Page count printing enable/disable
- EEPROM reset
- HSP ERROR count display

(1) Page count display

- The total number of pages counted at the engine is displayed on the LCD.

(2) Page count printing enable/disable

- This function selects whether to include (enable) or exclude (disable) the total number of printed pages counted at the engine at the time of menu printing.

(3) Rolling ASCII continuous printing

- The rolling ASCII pattern is printed continuously for various engine tests.
- Press the ON-LINE key to cancel this mode.

(4) EEPROM reset

- All EEPROM areas including Menu level-2 to the factory default values.
- The following items are excluded
 - Head drive time setting
 - ENGINE Maintenance Item
 - Revision (Including Destination setting)

(5) HSP ERROR recovery

- Select HSP ERROR recovery function either recover or stop.

(6) HSP ERROR count

- Display total HSP ERROR count.

(7) HSP ERROR count reset

- Reset the HSP ERROR counter.

System Maintenance mode menu system

Category	Selection	DF	After pressing ENTER key	After completing the process
PAGE CNT nnnnnn				
PAGE PRT	DISABLE ENABLE	*		
CONT PRT			CONT PRT PRINTING	CONT PRT CANCELLED (ON LINE SW Press)
EEPROM RESET			EEPROM RESETTING	EEPROM RESET
HSPERR	RECOVER STOP	*	SETTING EEPROM	
HSPERR CNT nn				
HSPERR CNT RST			HSPERR RESETTING	HSPERR CNT RST

4.1.3 Engine maintenance mode

To set the engine maintenance mode, turn on the power switch of the page printer while pressing on the ENTER and FORM FEED keys. The engine maintenance mode is set and "ENG MNT" is displayed on-screen.

Note: The engine maintenance mode is hidden and not available to the user.

To exit this mode, press the ONLINE switch. The operation mode is set. The engine maintenance mode supports the following functions:

- Head drive time setting (YELLOW, MAGENTA, CYAN, BLACK)
 - Drum count display (YELLOW, MAGENTA, CYAN, BLACK)
 - Total drum count display (YELLOW, MAGENTA, CYAN, BLACK)
 - Fuser count display
 - Belt count display
 - Oil roller count display
 - Setting of standard tray paper feed length
 - Setting of second tray paper feed length
 - Setting of frontfeeder paper feed length
 - Engine reset
-
- (1) Head drive time setting (Yellow, Magenta, Cyan, and Black)
Sets the time of driving each LED head.
 - (2) Drum count display (Yellow, Magenta, Cyan, and Black)
Displays the number of revolutions of each EP drum counted by the engine on the LCD.
 - (3) Total drum count display (Yellow, Magenta, Cyan, Black)
Displays the total number of rotations at each color.
 - (4) Fuser count display
Displays the total number of pages by Fuser which have been counted by the engine.
 - (5) Belt count display
Displays the total number of pages by Belt which have been counted by the engine.
 - (6) Oil roller count display
Displays the counter of the oil roller.
 - (7) T1 position (Setting of standard tray paper feed length)
Sets a value for correcting the amount of paper feeding of the standard tray.
 - (8) T2 position (Setting of second tray paper feed length)
Sets a value for correcting the amount of paper feeding of the second tray.
 - (9) Engine reset
 - Resets the contents of all EEPROM areas used by the engine with default values.
 - Does not reset the following items:
 - LED head drive time
 - Menu level 1
 - Menu level 2
 - Operator Panel Menu Disable/Enable
 - Page Print Disable/Enable

Engine maintenance mode memu system (1/2)

Category	Selection	DF	After pressing ENTER key	After completing the process
YELLOW LED HEAD	No.1 No.2 - No.16 No.17 - No.32		SETTING EEPROM	
MAGENTA LED HEAD	No.1 No.2 - No.16 No.17 - No.32		SETTING EEPROM	
CYAN LED HEAD	No.1 No.2 - No.16 No.17 - No.32		SETTING EEPROM	
BLACK LED HEAD	No.1 No.2 - No.16 No.17 - No.32		SETTING EEPROM	

Engine maintenance mode menu system (2/2)

Category	Selection	DF	After pressing ENTER key	After completing the process
YELLOW DRMCNT nnnn				
Yellow DRMCNT T nnnnnnn				
MAGENTA DRMCNT nnnn				
Magenta DRMCNT T nnnnnnn				
CYAN DRMCNT nnnn				
Cyan DRMCNT T nnnnnnn				
BLACK DRMCNT nnnn				
Black DRMCNT T nnnnnnn				
FUSER COUNT nnnn				
BELT COUNT nnnn				
Oil Roller Count nnnnnnnn				
T1 POSITION	0 mm +1 mm ~ +7 mm -8 mm ~ -1 mm	*	SETTING EEPROM	
T2 POSITION	0 mm +1 mm ~ +7 mm -8 mm ~ -1 mm	*	SETTING EEPROM	
FF POSITION	0 mm +1 mm ~ +7 mm -8 mm ~ -1 mm	*	SETTING EEPROM	
ENGINE RESET			ENGINE RESETTING	ENGINE RESET

4.2 Adjustments after Parts Replacement

Adjustments required after parts replacement are listed below.

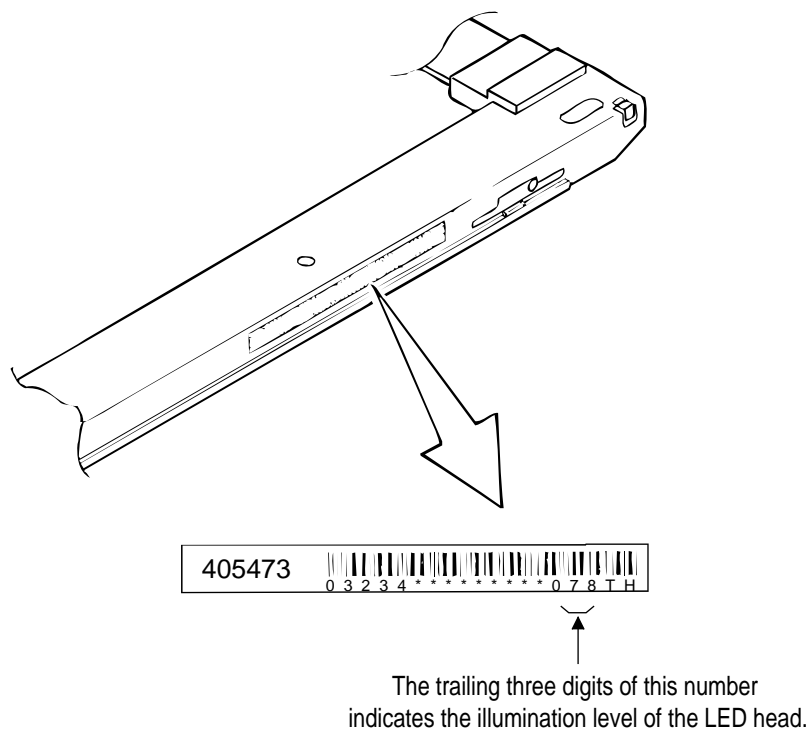
Adjustment and correction of color deviations are always required after parts are replaced.

Part replaced	Adjustment required
LED head	Correct color deviations.
Drum cartridge (Y, M, C, B, and K)	Reset the drum counter and correct color deviations.
Fuser Unit	Reset the fuser counter and correct™™ color deviations.
Belt cassette assembly	Reset the belt counter and correct color deviations.
EEPROM (PU block)	Correct color deviations.
Oil Roller	Reset the oil roller counter.
Other parts	Correct color deviations (if any).

4.2.1 Confirm the LED head driving time

Note: The OP8c, if a new LED HEAD is placed, reads the contents of EEPROM within the LED HEAD, automatically re-setting the drive time. Therefore, the re-setting of drive time is unnecessary, but a confirmation to the drive time re-set is necessary.

- Display of illumination level of the LED head



Find a parameter value corresponding to the illumination level of the LED head in the table below.

a. Illumination Level - LED Driving Time table

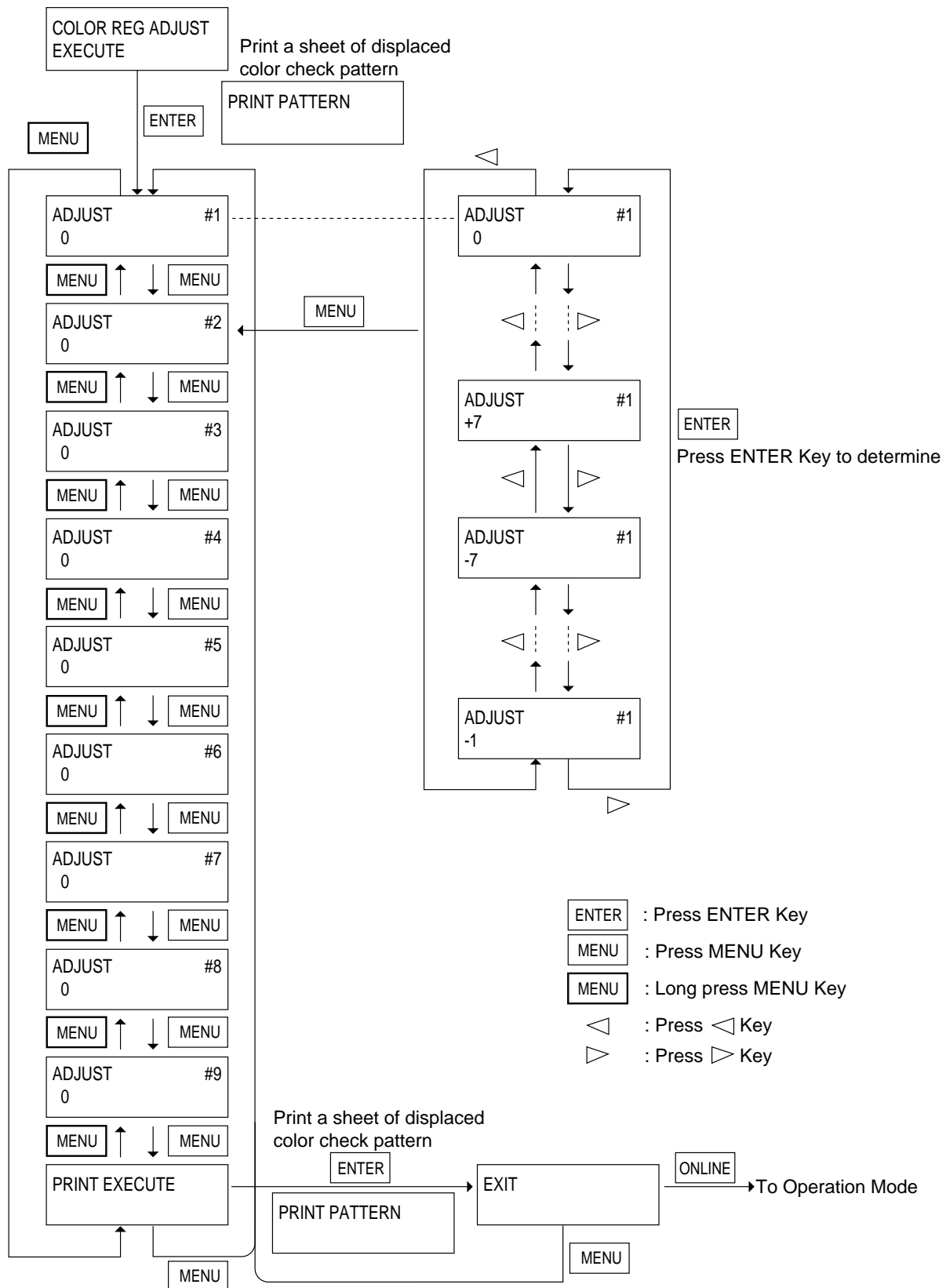
Parameter value (displayed on LCD)	Illumination level of LED head	Parameter value (displayed on LCD)	Illumination level of LED head
1	155	17	53 - 57
2	145 - 154	18	50 - 52
3	136 - 144	19	47 - 49
4	127 - 135	20	44 - 46
5	119 - 126	21	41 - 43
6	111 - 118	22	38 - 40
7	104 - 110	23	36 - 37
8	97 - 103	24	33 - 35
9	91 - 96	25	31 - 32
10	85 - 90	26	29 - 30
11	80 - 84	27	27 - 28
12	74 - 79	28	26 - 26
13	70 - 73	29	25 - 25
14	65 - 69	30	22 - 24
15	61 - 64	31	21 - 21
16	58 - 60	32	20

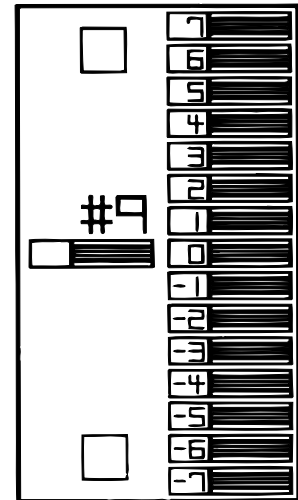
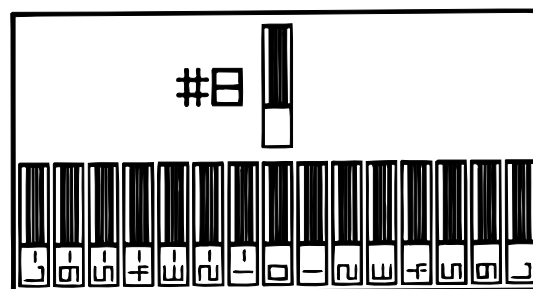
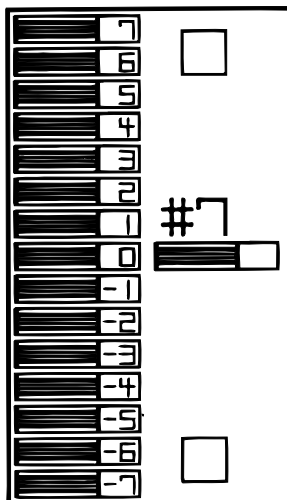
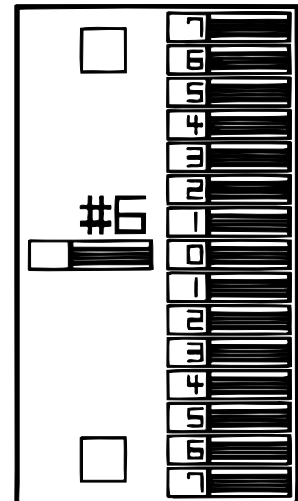
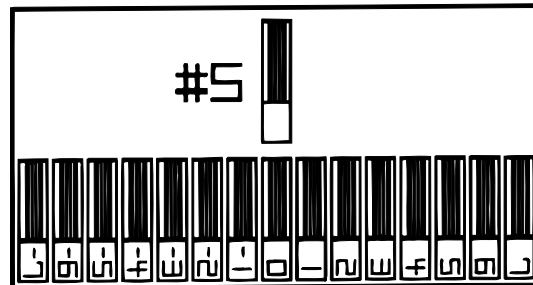
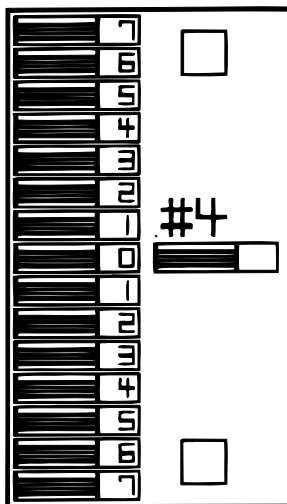
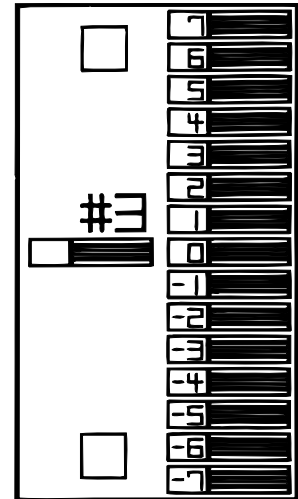
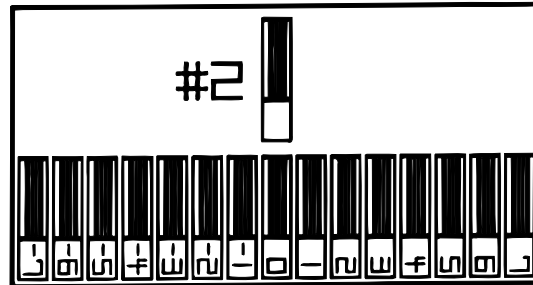
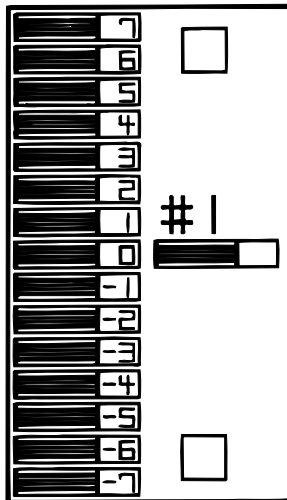
4.2.2 Color deviation correction

After replacing a part of the page printer, be sure to check whether colors are matched. If not, correct the deviations.

- Method of correcting color deviations
 - (a) Set the User Maintenance mode, select the Color Deviation Correction mode (COLOR REG ADJUST EXECUTE), and print out a color chart (PRINT PATTERN). In this mode, the page printer cannot receive any data from the host computer.
 - (b) Watch the printed color and check color deviations (#1 to #3 for yellow, #4 to #6 for magenta, and #7 to #9 for cyan).
 - (c) After a color chart is printed out, the menu shows the ADJUST #1 mode for entering a correction value for the left (#1) yellow chart.
 - (d) Enter correction values for #1 (left yellow chart), #2 (middle yellow chart) and #3 (right yellow chart). Similarly enter correction values for #4 to #6 for left, middle, and center magenta charts and for #7 to #9 for left, middle, and center cyan charts.
 - (e) After entering all correction values, print out a new color chart (by PRINT EXECUTE), and check color deviation.
 - (f) Repeat the above steps until all colors match.
 - (g) Press the ONLINE switch to exit the color correction mode (by EXIT). Initialize the page printer and enter the operation mode.

The menus for correction of color deviations are as follows:





olor check pattern

5. PERIODIC MAINTENANCE

5.1 Periodically Replaced Parts

We recommend user that as specified, the parts shall be replaced periodically. (If not replaced, the printout quality may not be assured and in extreme cases, the page printer may be in trouble.)

Parts Name	Display of warning condition	Recommend condition for replacement	Adjustment after replacement
Toner Cartridge	When the "TONER LOW" message is displayed	When 1,800 page are printed out (5% print density) (without the first cartridge)	Replaced Toner Cartridge
I/D Unit	When the "CHG DRUM" message is displayed	When 12,000 pages are printed out	Reset the drum counter of the replaced drum.
Holder Assy Oil Roller	When the "OIL ROLLER LIFE" message is displayed	When 10,000 page are printed out	Replaced Holder Assy Oil Roller
Box toner Assy	When the "WASTE TONER FULL " message is displayed	When 2,500 page are printed out (single images of 5% print density)	Replaced Box toner Assy
Heat Unit Assy	When the "FUSER LIFE" message is displayed	When 60,000 pages are printed out	Reset the fuser counter.
Belt cassette Assy	When the "BELT LIFE" message is displayed	When 50,000 pages are printed out	Reset the belt counter.

The above periodic parts replacement is carried out by User.

5.2 Cleaning

Periodically clean the inside and outside the page printer with soft cloth and small vacuum cleaner (Handy Cleaner) when necessary.

CAUTION:

Do not touch the terminals of the image drums, the LED lens array, and the LED head connector block.

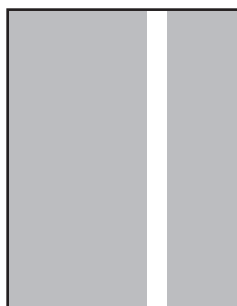
5.3 Cleaning the LED Lens Array

The LED lens array must be cleaned when the printed paper has white lines or irregular colors (void, light printing) along vertically down of the paper.

CAUTION:

Always use the LED head cleaner to clean the LED lens array. (The LED head cleaner always comes with the toner cartridge.)

White line or irregular color
(void, light printing)



5.4 Cleaning the Pickup Roller

When lines along the length are developed, clean up Pick up Roller.

(Note) Clean it up with a soft cloth and the like so that the surface is not scratched.

6. TROUBLESHOOTING PROCEDURES

6.1 Troubleshooting Tips

- (1) Check the basic check points covered in the user's manual.
- (2) Gather as much information on the problem from the customer as possible.
- (3) Perform inspections in conditions close to those in which the problem had occurred.

6.2 Points to Check before Correcting Image Problems

- (1) Is the printer being run in proper ambient conditions?
- (2) Have the supplies (toner) and the routine replacement part (image drum cartridge) been replaced properly?
- (3) Is the paper normal? See paper specifications section.
- (4) Has the image drum cartridge been loaded properly?

6.3 Tips for Correcting Image Problems

- (1) Do not touch, or bring foreign matter into contact with the surface of the image drum.
- (2) Do not expose the image drum to direct sunlight.
- (3) Keep hands off the fuser unit as it is heated during operation.
- (4) Do not expose the image drum to light for longer than 5 minutes at room temperature.

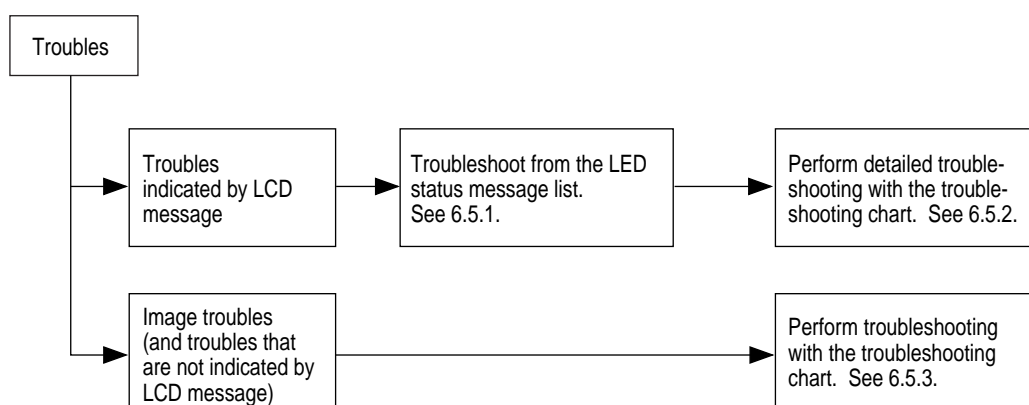
6.4 Preparation for Troubleshooting

(1) Operator panel display

The failure status of this printer is displayed on the liquid crystal display (LCD) in the operator panel. Take proper corrective action as directed by messages that are displayed on the LCD.

6.5 Troubleshooting Flow

If troubles should develop in this printer, troubleshoot in the following procedure flow:



6.5.1 LCD status message/trouble list

Table 6-1 lists the status and troubles that may be indicated by messages on the LCD.

xxx: Emulation in operation (AUT, PCL, PS)

ffff: Trays (Tray1, Tray2, Front)

mmmmm: Paper Size (Letter, A4, etc...)

Table 6.1

Category	LCD Status Message	LED						Trouble or Status	Remedy
		K	C	M	Y	READY	ATTENTION		
Daily status	■■■■■■■■■■ ■■■■■■■■■■	Undefined	Undefined	Undefined	Undefined	ON	OFF	Displayed when the page printer is powered on.	Normal operation When powered on, the page printer turns on LEDs for about one second to check whether the LEDs and the LCD are normal.
	INITIALIZING	Undefined	Undefined	Undefined	Undefined	OFF	OFF	Displayed while the controller is initializing (after the page printer is powered on).	Normal operation
	ON-LINE . xxx tttt	Undefined	Undefined	Undefined	Undefined	ON	Undefined	The printer is in the on-line mode.	Normal operation
	OFF-LINE . xxx tttt	Undefined	Undefined	Undefined	Undefined	OFF	Undefined	The printer is in the off-line mode.	Normal operation
	PRINTING	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Displayed while the page printer is printing.	Normal operation
	PROCESSING . xxx	Undefined	Undefined	Undefined	Undefined	Blink	Undefined	Displayed while the page printer is receiving data or performing the output processing.	Normal operation
	DATA PRESENT . xxx	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Indicates that the data remains unprinted in the buffer.	Normal operation
	RESET TO FLUSH	Undefined	Undefined	Undefined	Undefined	ON	Undefined	This message is displayed data remain unprinted in the buffer (offline). This message prompts the user to press the RESET switch, if cancel the data.	To clear this message, press the RESET switch.
	RESET TO SAVE	Undefined	Undefined	Undefined	Undefined	OFF	OFF	This message prompts the user need to press the RESET switch before writing the new menu setting in EEPROM. This message is displayed when the printer cannot reset automatically as there remain data and temporary attributes (DLL, macro, user patter, or user symbol set) .	To clear this message, press the RESET switch.
	FLUSHING JOB	Undefined	Undefined	Undefined	Undefined	Blink	OFF	Indicates that the data (to the end of processing) is being canceled.	Normal operation
	PS NOT AVAILABLE	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Indicates that a printer language which is not available has been specified by the PjL command.	Normal operation When "CLEARABLE WARNINGS" on the menu is set to "ON", press the RECOVER switch to clear the message.
	COPY nnn/mmm	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Displays the number of a copies being printed out when the number of copies being printed is two or more.	Normal operation

Category	LCD Status Message	LED						Trouble or Status	Remedy
		K	C	M	Y	READY	ATTENTION		
Daily status	TNR SNS *****	ON	ON	ON	ON	Undefined	ON	Indicates that Toner sensor is abnormal when page counter is above thirty. (The LED of the color lights)	This message is cleared when the drum is properly positioned or sensor lever which is exchanged correspond to the LED color lights.
	POWER SAVING	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Indicates that the page printer enters the Power Save mode (in which the heater is powered off).	Normal operation
	TNR LOW *****	ON	ON	ON	ON	Undefined	ON or Blink	Indicator that the toner of the specified color is running out. However, when "LOW TONER" is set to "OFF," the ATTENTION indicator blinks.	Normal operation This message is cleared when the toner cartridge is replaced.
	CNG DRUM *****	ON	ON	ON	ON	Undefined	ON	Indicates that the life of a specified color drum has come. (The LED of the color lights.)	Normal operation This message is cleared when the specified drum is replaced. After the drum is replaced, its drum counter must be reset. (See the user's manual.)
	FUSER LIFE	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the life of the Heat unit Assy has come.	Normal operation This message is cleared when the Heat unit Assy is replaced. After the Heat unit Assy is replaced, its counter must be reset. (See the user's manual.)
	BELT LIFE	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the life of the belt cassette Assy has come.	Normal operation This message is cleared when the belt cassette assembly is replaced. After the belt cassette assembly is replaced, its counter must be reset. (See the user's manual.)
	RESET	OFF	OFF	OFF	OFF	OFF	OFF	Cleans the data left unprinted in the buffer and initializes the printer to the user default status. The temporary DLL, macro, and user patterns are deleted.	Normal operation
	PRINT DEMO PAGE	Undefined	Undefined	Undefined	Undefined	Blink or ON	Undefined	Prints out a demo page. This operation is started by a command when the READY LED is on or by a switch when the READY LED is blinking.	Normal operation

Category	LCD Status Message	LED						Trouble or Status	Remedy
		K	C	M	Y	READY	ATTENTION		
Daily status	PRINT MENU	Undefined	Undefined	Undefined	Undefined	Blink or ON	Undefined	Prints out a menu setting. This operation is started by a command when the READY LED is on or by a switch when the READY LED is blinking.	Normal operation
	OIL ROLLER LIFE	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the life of the Oil roller assy has come. (Warning)	This message is cleared when the oil roller assy is replaced. After the oil roller assy is replaced, its counter must be reset. (See the user's manual)
	OIL ROLLER LIFE	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the life of the Oil roller assy has come. (Alarm)	
	PRINT FONTS	Undefined	Undefined	Undefined	Undefined	Blink or ON	Undefined	Prints out all character sets (fonts) that the page printer contains. This operation is started by a command when the READY LED is on or by a switch when the READY LED is blinking.	Normal operation
	***** TONER EMPTY	Blink	Blink	Blink	Blink	OFF	Blink	Displayed when 50 pages are printed after "Toner Low" was detected to prompt the user to replace the toner cartridge.	This message temporarily disappears when a cover of the page printer is opened but will be displayed every 20 pages unless the cartridge is replaced.
	WASTE TONER FULL	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Displayed when 100 pages are printed after "Box toner Assy Full" was detected to prompt the user to replace the box toner Assy.	This error is reset when the box toner Assy is replaced. Printing is suppressed until it is replaced.
	FRONT TRAY ERROR PRESS RECOVERKEY	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the front feeder has caused a home position error.	The front feeder becomes not available when the RECOVER switch is pressed. The other tray is available. This message is cleared when the front feeder assembly is replaced.
	COVER OPEN	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the printer covers is open.	This error is reset when the cover is closed. If this error occurs frequently, go to 6.5.2.
	BELT NOT INSTALLED	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the belt cassette Assy has not been installed.	This error is recovered when the belt cassette Assy is installed. Printing is suppressed until the belt cassette assembly is installed.

Category	LCD Status Message	LED						Trouble or Status	Remedy
		K	C	M	Y	READY	ATTENTION		
Daily status	WASTE TONER BOX NOT INSTALLED	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the box toner Assy has not been installed.	This error is recovered when the box toner Assy is installed. Printing is suppressed until the box toner assembly is installed.
	WASTE TNR NRFULL	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the Box toner Assy is near full.	Nothing
	OIL PAD NOT INSTALLED	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the Oil pad Assy has not been installed.	Please install the Oil pad Assy.
Buffer Overflow	ERROR MEMORY OVERFLOW	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that data overflowed the memory space. - Too much print data in one page - Too much macro data - Too much DLL data - Data overflow after compression of frame data	This error is recovered when the RECOVER switch is pressed. Expand RAM or reduce data.
	ERROR RECEIVE BUFFER OVERFLOW	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the receive buffer was overflowed.	This error is recovered when the RECOVER switch is pressed. Change the setting of Receive Buffer Size in the User Maintenance more bigger then send the data from the host or expand RAM.
Tray Paper Out	PAPER OUT mmmmmmmm tttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the tray is empty or the cassette assembly has not been installed. mm...m: paper size (Letter, Executive, Legal 14, Legal 13, A4, A5, A6, or B5 size) tttttt: Tray type (Tray 1, Tray 2, or Front)	This message is cleared when paper is set in the tray or the cassette assembly is mounted.
	CANNOT USE A6 PAPER ON TRAY 2	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Displayed when the second tray (optional) contains A6-size paper.	The second tray (optional) cannot use A6-size paper. The A6-size paper is available to the first tray or to the front feeder.
	TRAY 1 INSTALL	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the first tray is pulled out also when the second tray (optional) is used.	This message is cleared when the first tray is remounted correctly.
Paper Request	mmmmmm MANUAL PAPER REQUEST	Undefined	Undefined	Undefined	Undefined	ON	OFF	Requests the user to load the specified paper by message from manual feeder. mm...m: paper size (Letter, Executive, Legal 14, Legal 13, A4, A5, A6, or B5 size)	Normal operation This message is cleared when the specified paper is loaded from manual feeder.

Category	LCD Status Message	LED						Trouble or Status	Remedy
		K	C	M	Y	READY	ATTENTION		
Paper Request	mmmmmmmm ttttt PAPER REQUEST	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Requests the user to load the specified paper in the tray. mm...m: paper size (Letter, Executive, Legal 14, Legal 13, A4, A5, A6, or B5 size) ttttt: Tray type (Tray 1, Tray 2, or Front)	Normal operation This message is cleared when paper is set in the specified tray.
Paper Size Error	ERROR PAPER SIZE CHECK ttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that paper of the illegal size was fed from the specified tray. ttttt: Tray type (Tray 1, Tray 2, or Front)	Check the size of paper in the tray or whether two or more paper sheets are fed at a time. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.
Paper Jam Error	PAPER INPUT JAM CHECK ttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that a paper jam occurred on the paper feeding from the specified tray. ttttt: Tray type (Tray 1, Tray 2, or Front)	Check the size of paper in the tray or whether two or more paper sheets were fed at a time. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.
	PAPER FEED JAM CHECK ttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that a paper coming out of the tray jammed on the paper traveling printer. ttttt: Tray type (Tray 1, Tray 2, or Front)	Check the size of paper in the tray or whether two or more paper sheets were fed at a time. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.
	PAPER EXIT JAM REMOVE THE PAPER	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that a paper jammed on the way to the exit.	Open the cover and remove a paper jam from the inside of the page printer. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.
Interface Error	OKI HSP I/F CARD RESETING	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the OKI HSP interface card is being reset.	The page printer recovers automatically when resetting is complete.

Category	LCD Status Message	LED						Trouble or Status	Remedy
		K	C	M	Y	READY	ATTENTION		
Interface Error	Jam 001 Error	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that Process error occurred.	Notifies that the power supply LSI has been reset due to noise, etc. (process error) Open cover and remove the paper. Close cover to recover and proceed.
	ERROR HOST I/F OKI HSP xx	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that a fatal OKI HSP interface error has occurred. xx=10: Interface timeout xx=20: Initialization failed 10 seconds after the page printer is powered on. xx=21: It takes 3 seconds or more before the RUN mode starts or the page printer received a Run Mode command in the power-on mode. xx=22: HSP-PC communication error	The page printer recovers from the error when the RECOVER switch is pressed. If this error occurs frequently, replace the OKI HSP interface card or the main board (PCR PCB).
Controller Error	EEPROM RESETTING	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the ID number of EEPROM is invalid.	Sets the default values in EEPROM and it'll be recovered automatically.
	ERROR POSTSCRIPT	Undefined	Undefined	Undefined	Undefined	Blink	OFF	Indicates that the interpreter detected one of the errors given below. The data coming after this error is recovered until the end of the command. When the reception of the command is completed, this message is reset automatically. - Invalid PostScript command - The page is complicated and the vertical memory is full.	Simplify the pages.

Category	LCD Status Message	LED						Trouble or Status		Remedy
		K	C	M	Y	READY	ATTENTION			
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Code (nn)	Details of error	Remedy
								10	Indicates that an error was found in the program ROM by the program ROM check.	Turn on the power of the page printer again. If this error still occurs, replace the program ROM on the main board (PCR PCB) or the main board itself. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.
								30	Indicates that an error was found in the resident RAM by the resident RAM check.	Turn on the power of the page printer again. If this error still occurs, replace the main board (PCR PCB). When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.
								40	Indicates that an error was found in the EEPROM by the EEPROM check.	Turn on the power of the page printer again. If this error still occurs, replace the program ROM on the main board (PCR PCB) or the main board itself. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.
								50	Indicates that an error was found in the optional ROM by the optional ROM check.	Turn on the power of the page printer again. If this error still occurs, replace the optional ROM on the main board (PCR PCB) or the main board itself. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.
								60	Indicates that an error was found in the optional RAM by the optional RAM check.	Check the connection of the option RAM. Turn on the power of the page printer again. If this error still occurs, replace the main board (PCR PCB) or the option RAM. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.

Category	LCD Status Message	LED						Trouble or Status		Remedy
		K	C	M	Y	READY	ATTENTION			
Controller Error	ERROR nn	Blink	Blink	Blink	Blink	OFF	Blink	Code (nn)	Details of error	Remedy
								77	Indicates that Toner sensor is abnormal when page counter is below thirty.(alarm)	This message is cleared when the drum is properly positioned or sensor lever which is exchanged correspond to the LED color lights.
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	80	Indicates that a timeout occurred on interface between the page printer and the operator panel.	Check the connection between the main board and the operation panel. Turn on the power of the page printer again. If this error still occurs, replace the cable, the main board (PCR PCB) or the cover assembly operation panel. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.
								82	Indicates that a timeout occurred on CU-PU interface.	Check the connection between the main board and the engine board. Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the main board (PCR PCB) or the engine board (PX4 PCB), or the board itself. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.
		Blink	Blink	Blink	Blink	OFF	Blink	92	Indicates that the printer overruns.	See Chapter 6.5.2
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	D6	Yellow Image drum unit up/down error	See Chapter 6.5.2
								D7	Magenta Image drum unit up/down error	See Chapter 6.5.2
								D8	Cyan Image drum unit up/down error	See Chapter 6.5.2
								D9	Black Image drum unit up/down error	
								DA	Environment temperature sensor error	Make sure that the surrounding temperature stays $-10 < t < 50^{\circ}\text{C}$. If this condition is not satisfied, adjust the surrounding temperature, otherwise satisfied, replace the sensor board (RXM-PCB), junction board (PXF-PCB) or engine board (PX4-PCB).

Category	LCD Status Message	LED						Trouble or Status		Remedy
		K	C	M	Y	READY	ATTENTION			
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Code (nn)	Details of error	Remedy
								DB	Humidity sensor error	Make sure that the relative humidity stays 0% < h < 95%. (the subsequent contents are the same as those of [DA])
								DC	Waste-toner sensor error	Re-mount the waste toner box and re-power on to ensure whether the alarm goes off or not. If the alarm stays on, exchange waste toner sensor, or replace the junction board (PXF-PCB) or engine board (PX4-PCB).
								DE	Pinch roller up/down error	Turn on the power of the page printer again. If this error still occurs, replace the engine board (PX4 PCB) or the front feed assembly.
								E0	Fusing Unit Error	See Chapter 6.5.2
								E1	Fan Motor Error	See Chapter 6.5.2
								E8	Option status error 2 (Error on interface between the engine board and the second tray)	Check the connection between the engine board and the second tray board. Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4 PCB), the junction board (PXF PCB), the second tray board (AOLT PCB). When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
								E9	SRAM error	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
								EA	PW-LSI error	Turn on the power of the page printer again. If this error still occurs, replace the power supply board (power-supply PCB).

Category	LCD Status Message	LED						Trouble or Status		Remedy
		K	C	M	Y	READY	ATTENTION			
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Code (nn)	Details of error	Remedy
								EC	Engine firmware lost control	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
								ED	EEPROM error (Timeout)	Turn on the power of the page printer again. If this error still occurs, replace the EEPROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and
								EE	EEPROM error (Not Exist)	remount it on the new main board. Turn on the power of the page printer again. If this error still occurs, replace the EEPROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
								EF	Engine ROM/RAM error	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
								F0	Monitor error (Double wait)	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the main board (PCR PCB) or the main board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.

Category	LCD Status Message	LED						Trouble or Status		Remedy
		K	C	M	Y	READY	ATTENTION			
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Code (nn)	Details of error	Remedy
								F1	Monitor error (Argument error)	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the main board (PCR PCB) or the main board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
								F4	Engine background error	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4-PCB) or the engine board.

Category	LCD Status Message	LED						Trouble or Status		Remedy
		K	C	M	Y	READY	ATTENTION			
Controller Error	ERROR CONTROLLER nn-aaaaaaa	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the controller error has occurred.		Turn on the power of the page printer again. The error will be reset.
								Code (nn)	Details of error	
								01	TLB (Translation Lookaside Buffer) correction exception	If the error still occurs, replace the main board (PCR PCB). When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
								02	TLB exception (Load or Instruction Fetch)	
								03	TLB exception (Store)	
								04	Address error exception (Load or Instruction Fetch)	
								05	Address error exception (Store)	
								06	Bus error exception (Instruction Fetch)	
								07	Bus error exception (Data Load or Store)	
								08	System call exception	
								09	Break point exception	
								0A	Reserved instruction exception	
								0B	Co-processor disabled exception	
								0C	Operation overflow exception	
								0D	Trap exception	
								0F	Floating-point exception	
								B0	NMI: Hardware breakpoint	
								B1	NMI: Write protect	
								C0	Cache error	

6.5.2 LCD message troubleshooting


If a trouble cannot be repaired according to the LCD message trouble list, troubleshoot according to the troubleshooting chart.

No.	Trouble	Flowchart Number
1	The printer does not work normally after being turned on.	①
2	JAM Error Paper Input Jam (1st Tray) Paper Input Jam (Front Feeder) Paper Feed Jam Paper Exit Jam2-4	②-1 ②-2 ②-3 ②-4
3	Paper Size Error	③
4	I/D Unit Up/Down Error	④
5	Fusing Unit Error	⑤
6	Fan Motor Error	⑥
7	Cannot receive data from parallel interface.	⑦
8	Cannot receive data from OKI HSP interface.	⑧

Note: When replacing the main board (PCR PCB) and the engine board (PX4 PCB), demount the EEPROM chips from the old board and remount them on the new main boards.

① The printer does not work normally after turned on the power of the printer.

- Turn off the power of the printer, wait a few seconds, then turn on power again.

• Is  displayed on the LCD (for about 1 second)?

• No Is the AC cable connected correctly?

No Connect the AC cable correctly.

▼ Yes Does a voltage of +5V are being supplied on the panel connector of the main board (PCR PCB)?
Pin 5: +5V Pin 2: 0V

Yes Is the operator panel cable connected correctly?

No Connect the cable correctly.

▼ Yes Replace the operator panel cable. Recovered?

No Replace the cover assembly operator panel.

▼ Yes End

▼ No Check the connection of the PU connector. Does a voltage of +5V are being supplied on the PU connector of the main board (PCR PCB)?
Pin 6, 15, 26, 35: +5V Pin 1, 3, 5, 11, 20, 21, 40: 0V

Yes Replace the main board.

▼ No Does a voltage of +5V are being supplied on the Power connector of the engine board (PX4 PCB)?
Pin 11, 12, 13, 14: +5V Pin 3, 4, 5, 6, 23, 24, 5, 26, 27, 28, 29, 30: 0V

No Check the connection of the power connector or replace the low-voltage power supply unit.

▼ Yes Replace the engine board.

▼ Yes Do the following voltages are being supplied on the PU connector of the main board?
Pin 6, 15, 26, 35: +5V Pin 2, 22: +3.3V
Pin 23: -12V Pin 25: +12V Pin 1, 3, 5, 11, 20, 21, 40: 0V

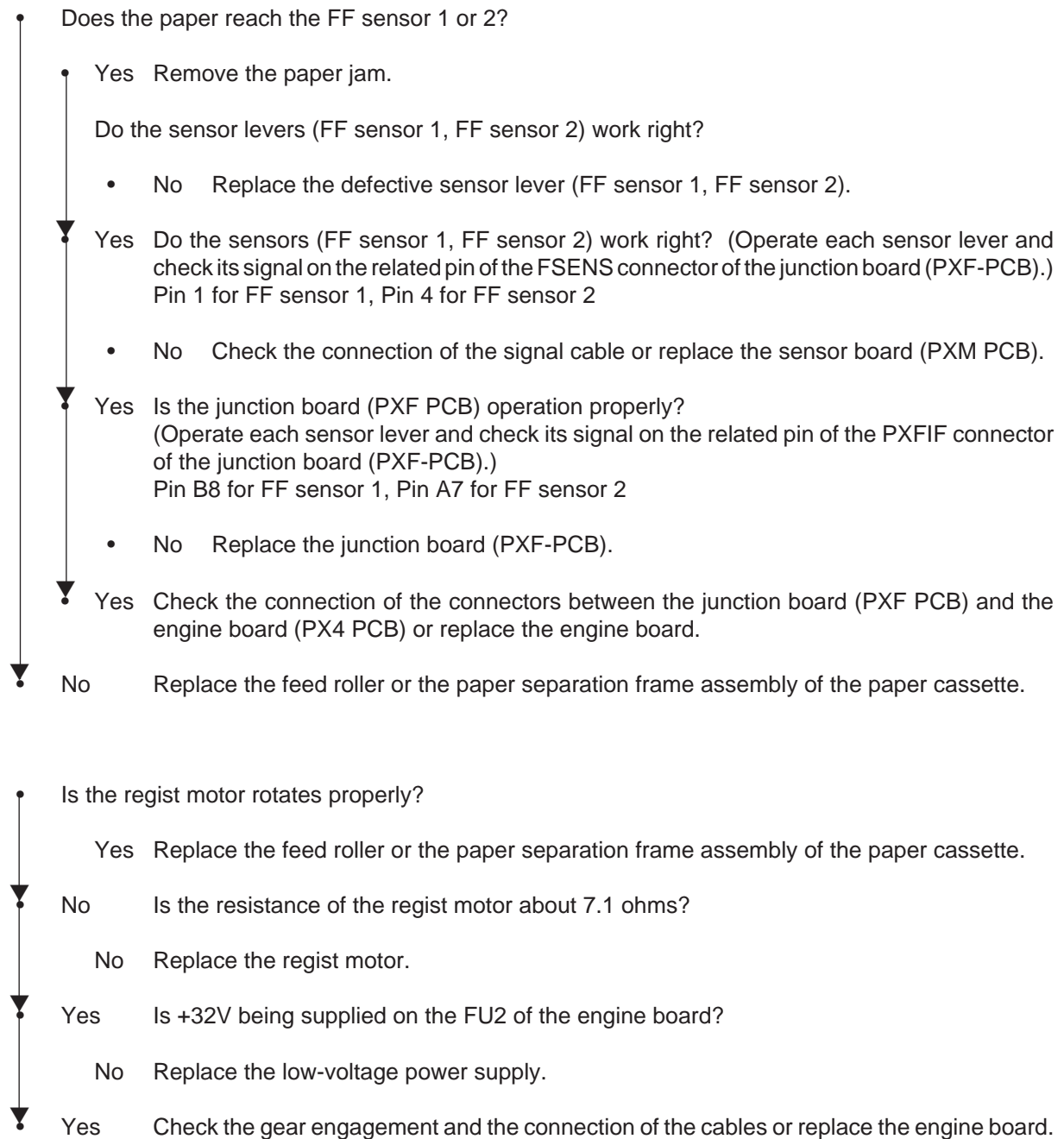
Yes Replace the main board.

▼ No Do the following voltages are being supplied on the power connector of the engine board?
Pin 11, 12, 13, 14: +5V Pin 15, 16, 17, 18: +3.3V
Pin 1: +12V Pin 2: -12V Pin 7, 8, 9, 10: +32V
Pin 3, 4, 5, 6, 23, 24, 25, 26, 27, 28, 29, 30: 0V

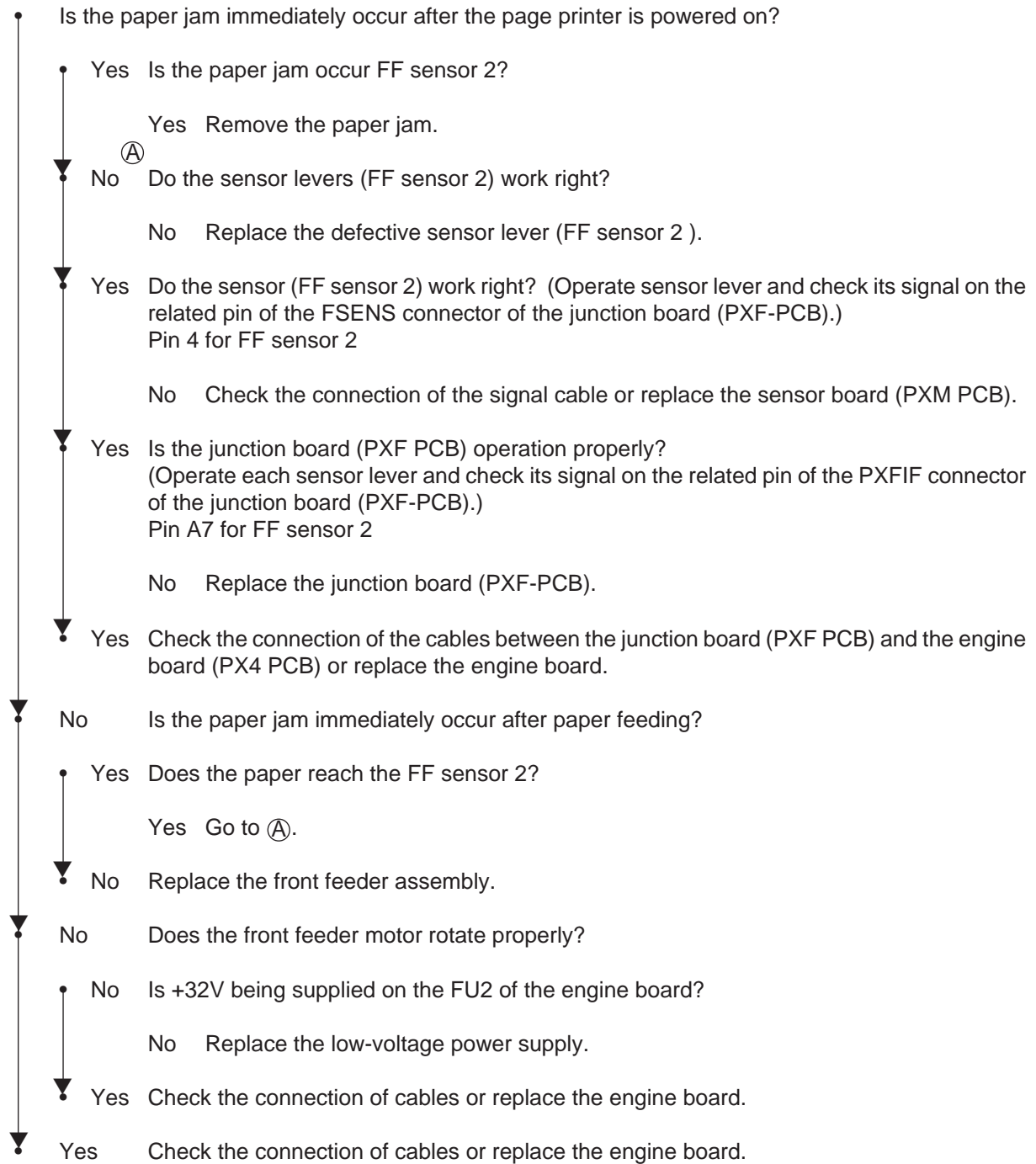
Yes Replace the engine board.

▼ No Replace the low-voltage power supply unit.

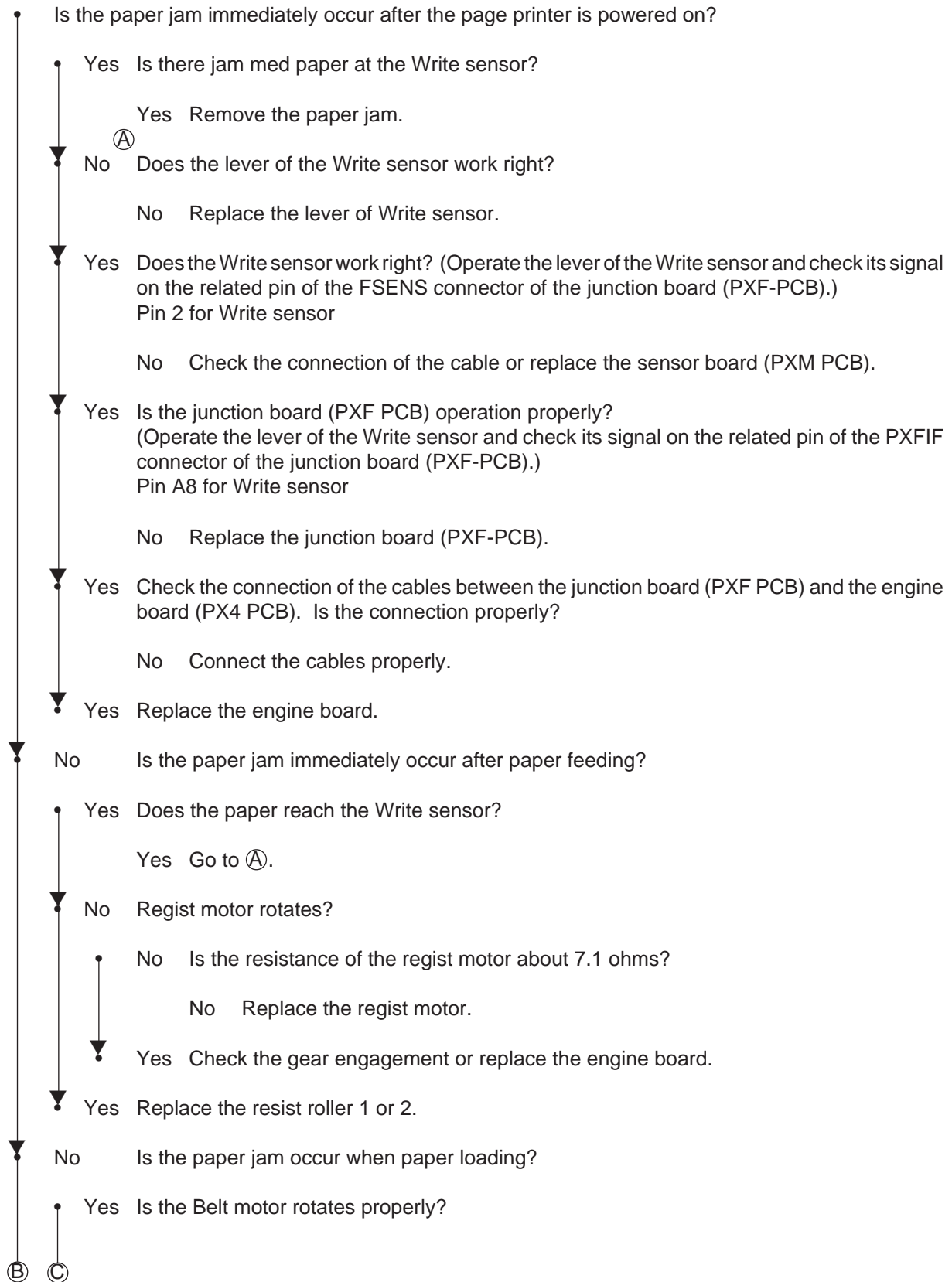
②-1 Paper input jam (1st tray)

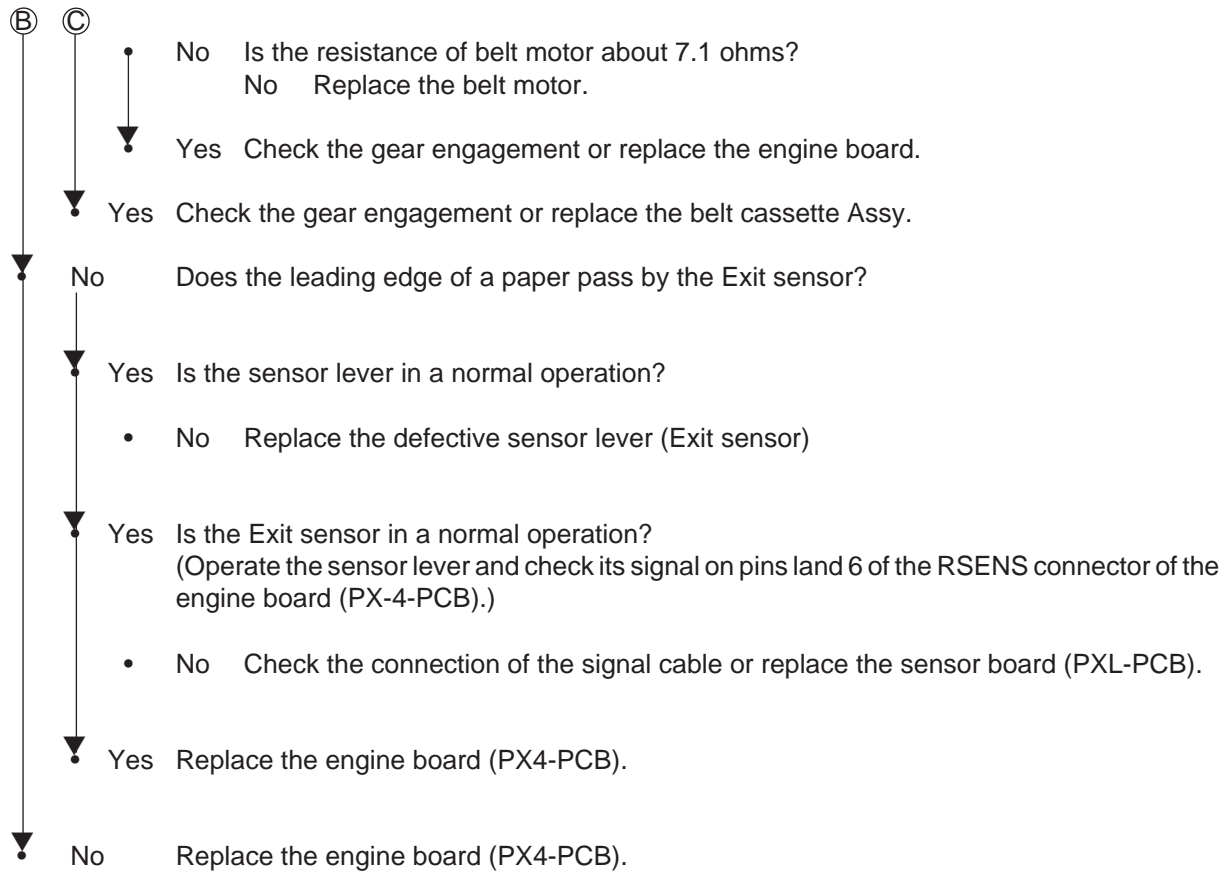


②-2 Paper input jam (Front feeder)

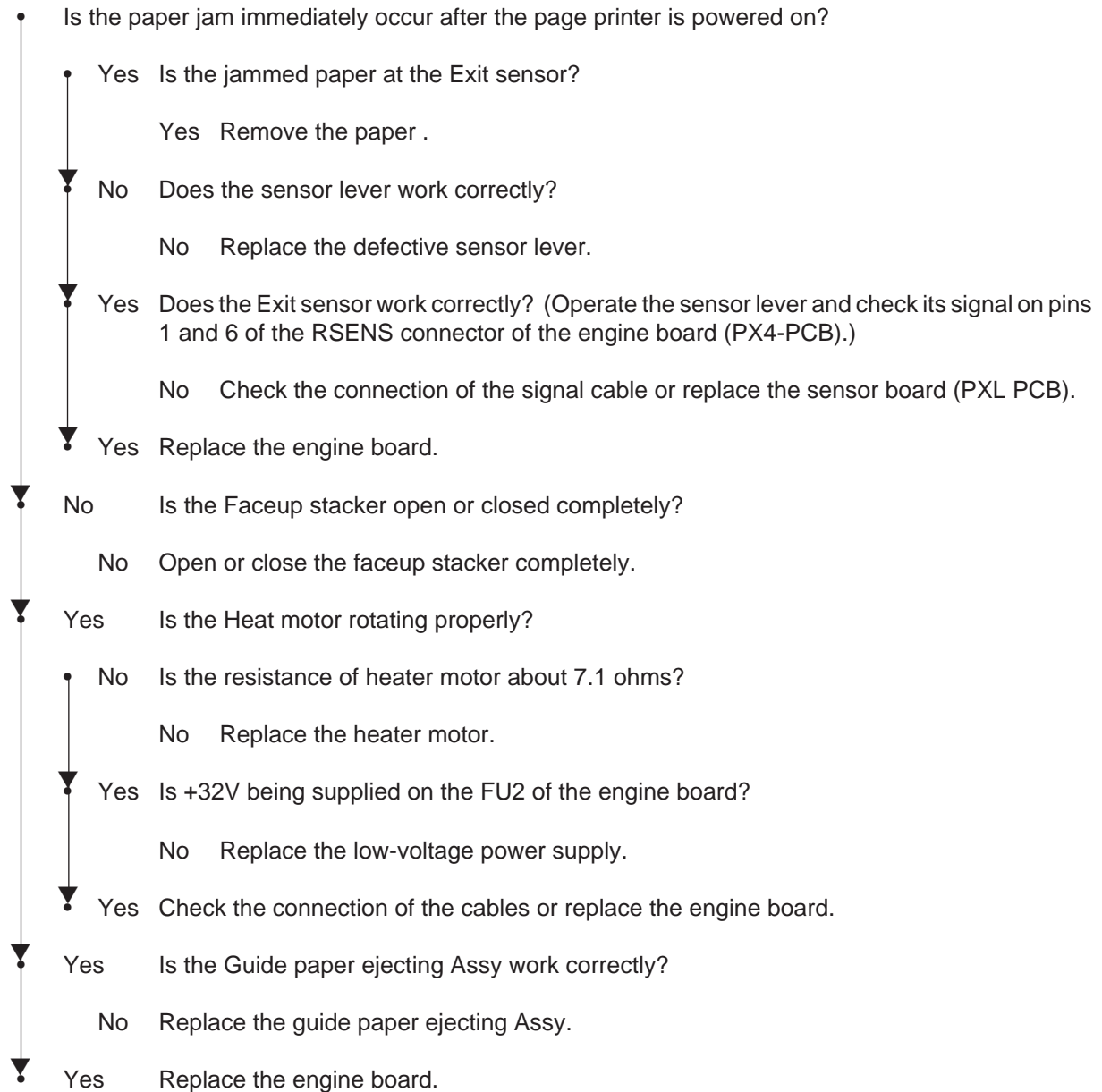


②-3 Paper feed jam

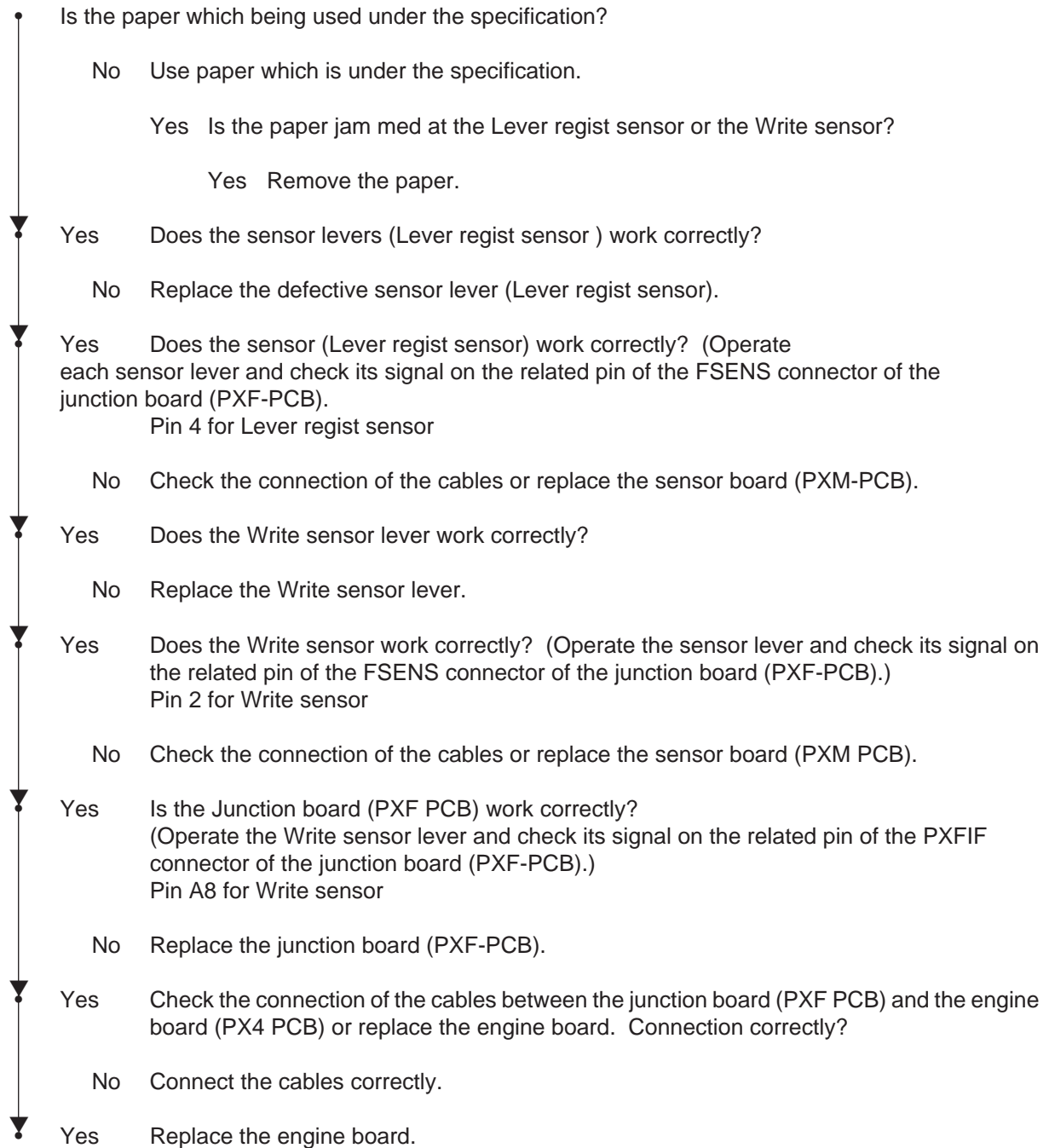




②-4 Paper Exit Jam



③ Paper Size Error



④ Image Drum Unit (IDU) Up/Down Error

- Turn off power to the page printer, wait a few seconds, then turn on power again.
- Each image drum unit (IDU) motor rotating for printout?
 - No Is the value of IDU motor resistance about 7.1 ohms?
 - No Replace the defective IDU motor.
 - Yes Is +32V being supplied on the FU2 of the engine board?
 - No Replace the low-voltage power supply.
 - Yes Check the connection of the cables or replace the engine board.
- Yes Each IDU sensor lever work correctly?
 - No Check the gear engagement and the sensor lever operation or replace the gear or the sensor lever.
- Yes Is each IDU sensor work correctly?
(Cover up for each IDU sensor to shut off light and check its signal on the related pin of the PXFI connector of the junction board (PXF PCB).)
Pin B13 for the yellow IDU sensor Pin A13 for the magenta IDU sensor Pin B14 for the cyan IDU sensor Pin A14 for the black IDU sensor
 - No Replace the junction board (PXF PCB).
- Yes Check the connection of the cables between the junction board (PXF PCB) and the engine board (PX4 PCB) or replace the engine board.

⑤ Fusing Unit Error

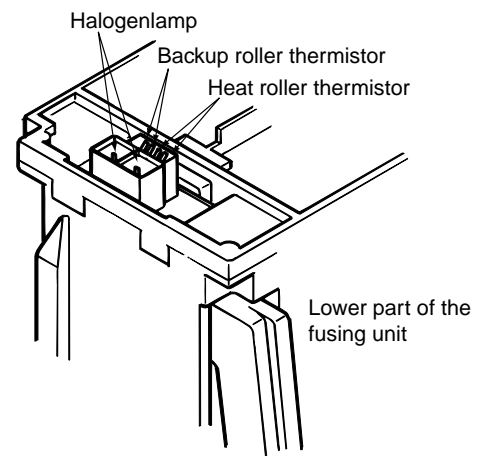
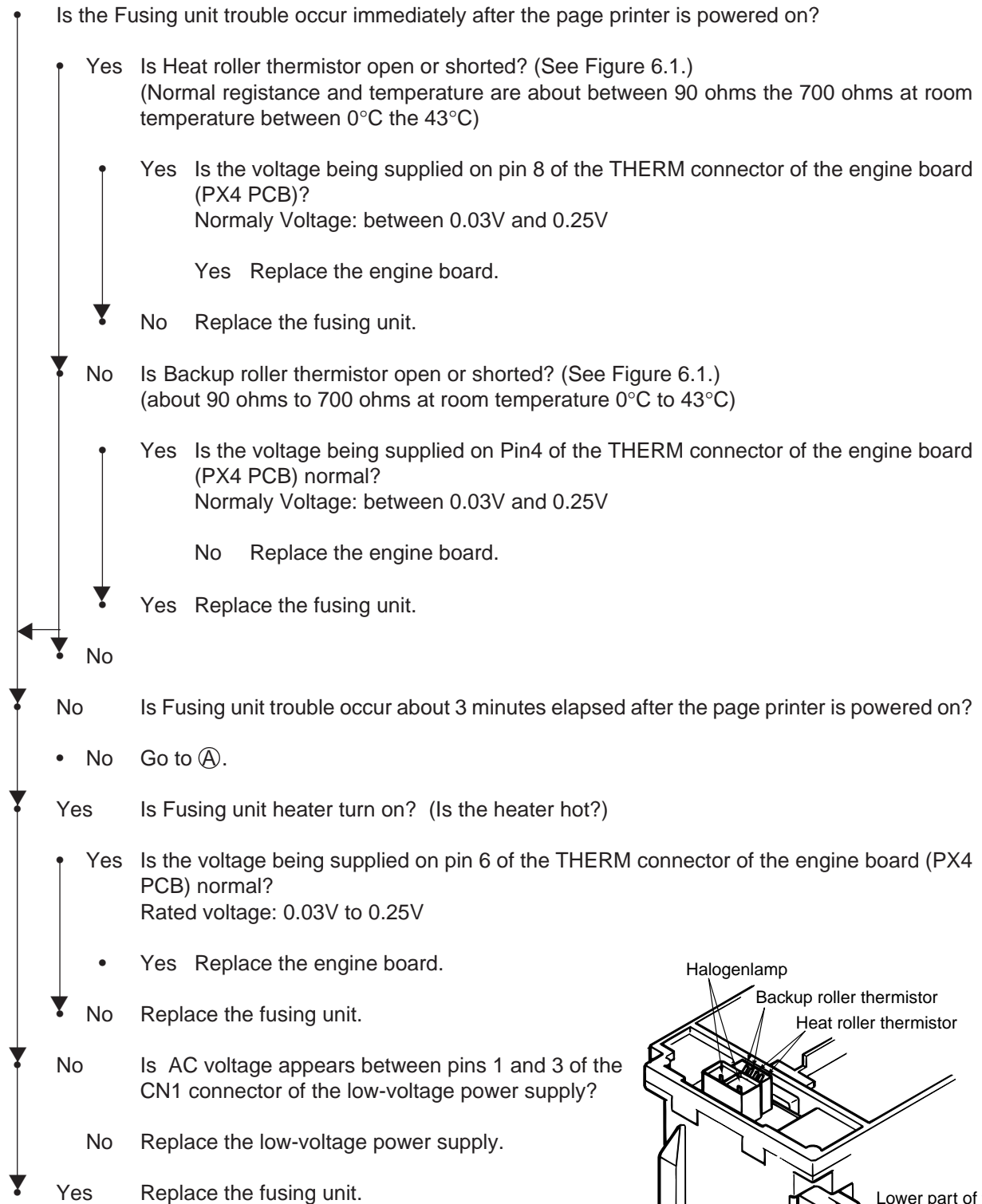
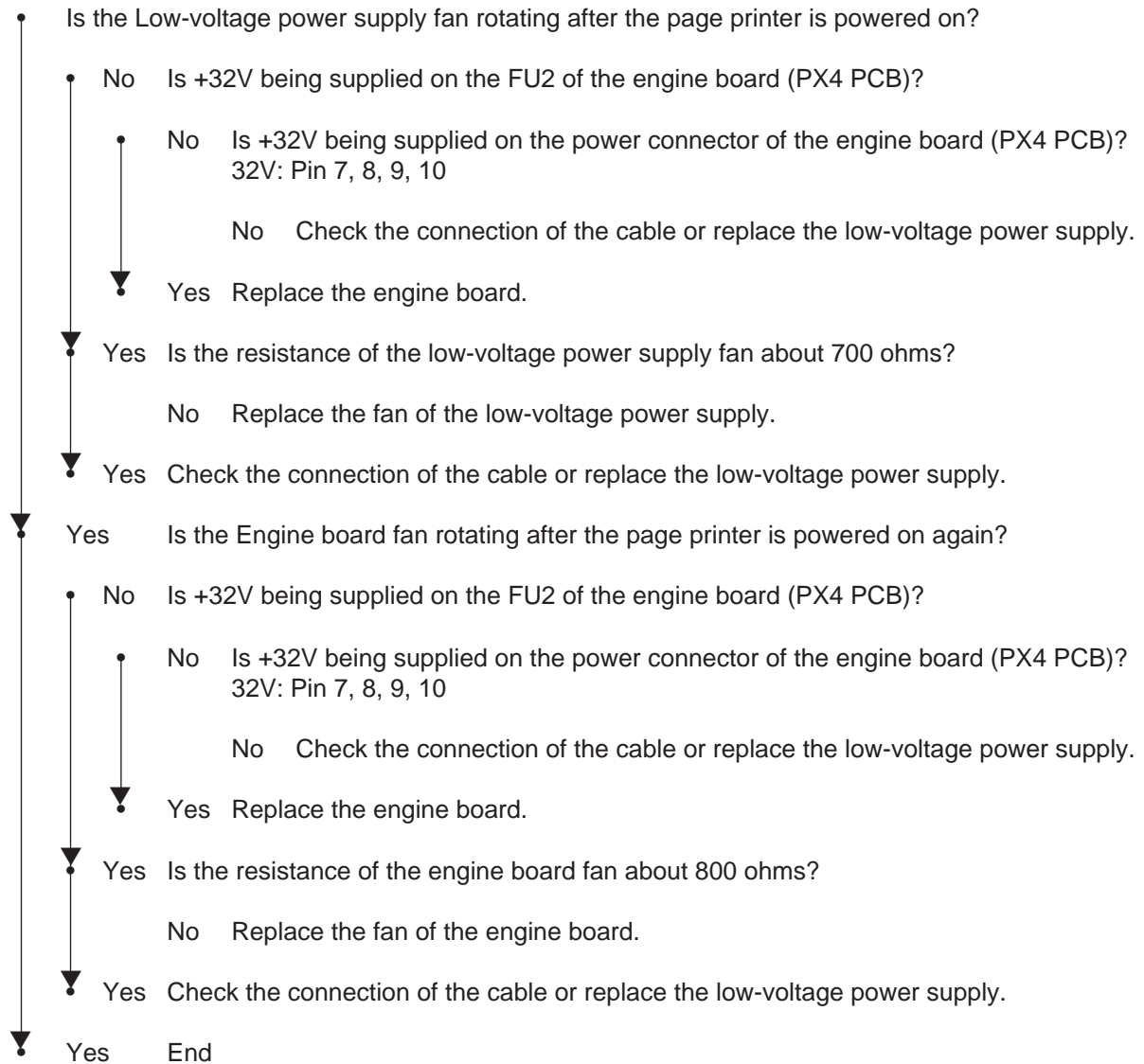
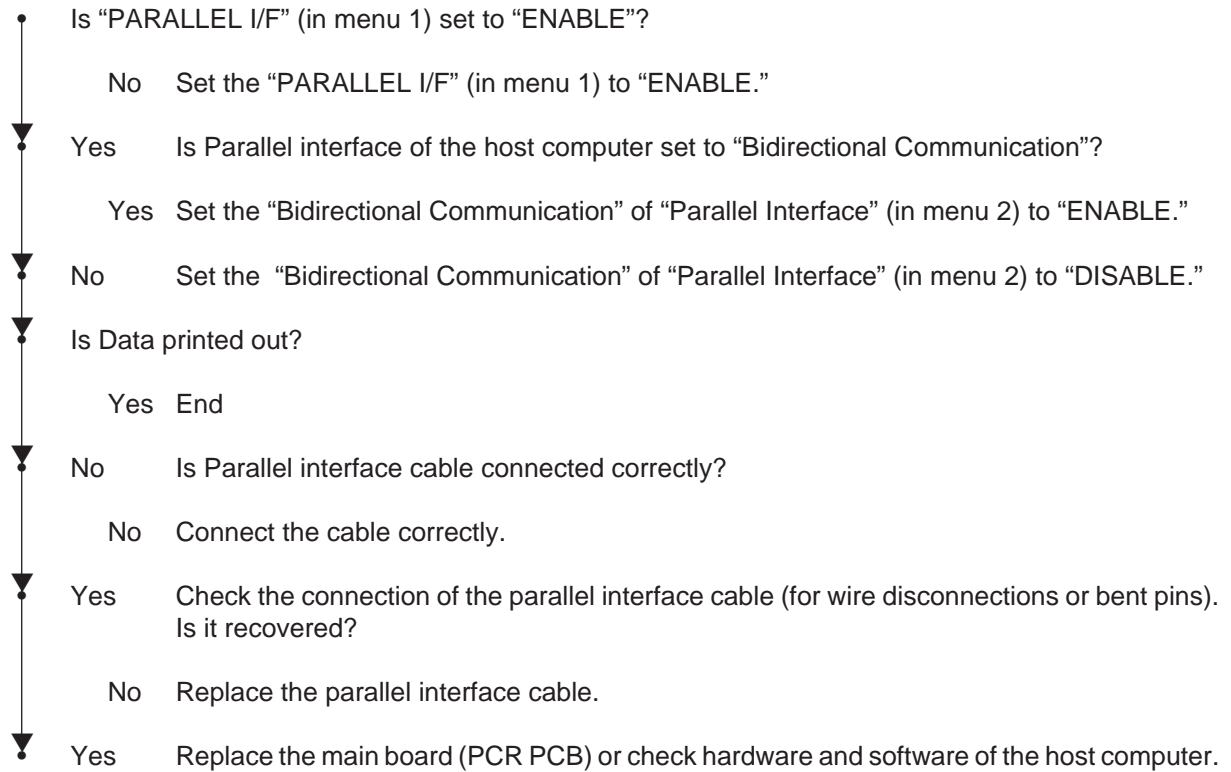


Figure 6.1

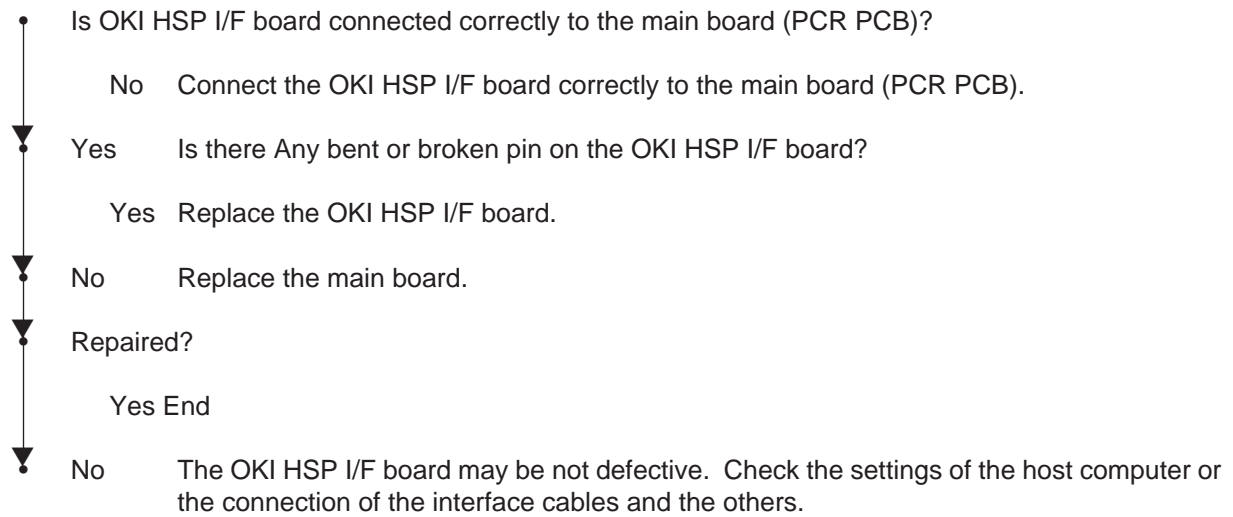
⑥ Fan Motor Error



⑦ Cannot Receive Data from Parallel Interface.



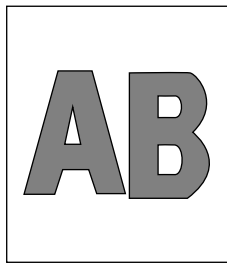
⑧ Cannot Receive Data from OKI HSP Interface.



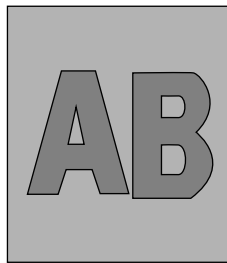
6.5.3 Image troubleshooting

When the printout images are not satisfactory as shown below, take the troubleshooting steps given in this paragraph.

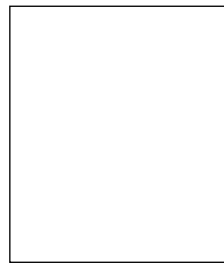
Printout problem	Reference flowchart No.
Light or blurred images on the whole printout area (Figure 6.2-A)	①
Dirty stained ground (Figure 6.2-B)	②
No printout data on blank paper (Figure 6.2-C)	③
Black stripe or lines in the vertical direction (Figure 6.2-D)	④
White stripe or lines in the vertical direction (Figure 6.2-F)	⑤
Poor fusing (Image are blurred or peeled off when toached with finger)	⑥
Cyclical printout defects (Figure 6.2-E)	⑦
Missing characters or colors	⑧
Poor synthesization Colors	⑨
Printout colors different from original colors	⑩



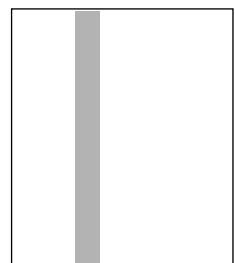
Ⓐ Light or blurred images as a whole



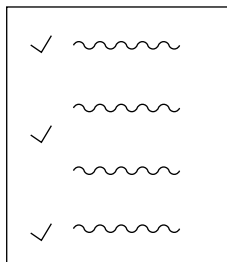
Ⓑ Dark background density



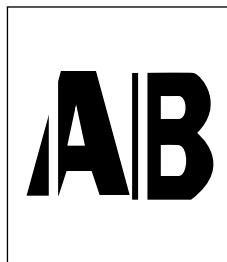
Ⓒ Blank paper



Ⓓ Black stripes in the vertical direction

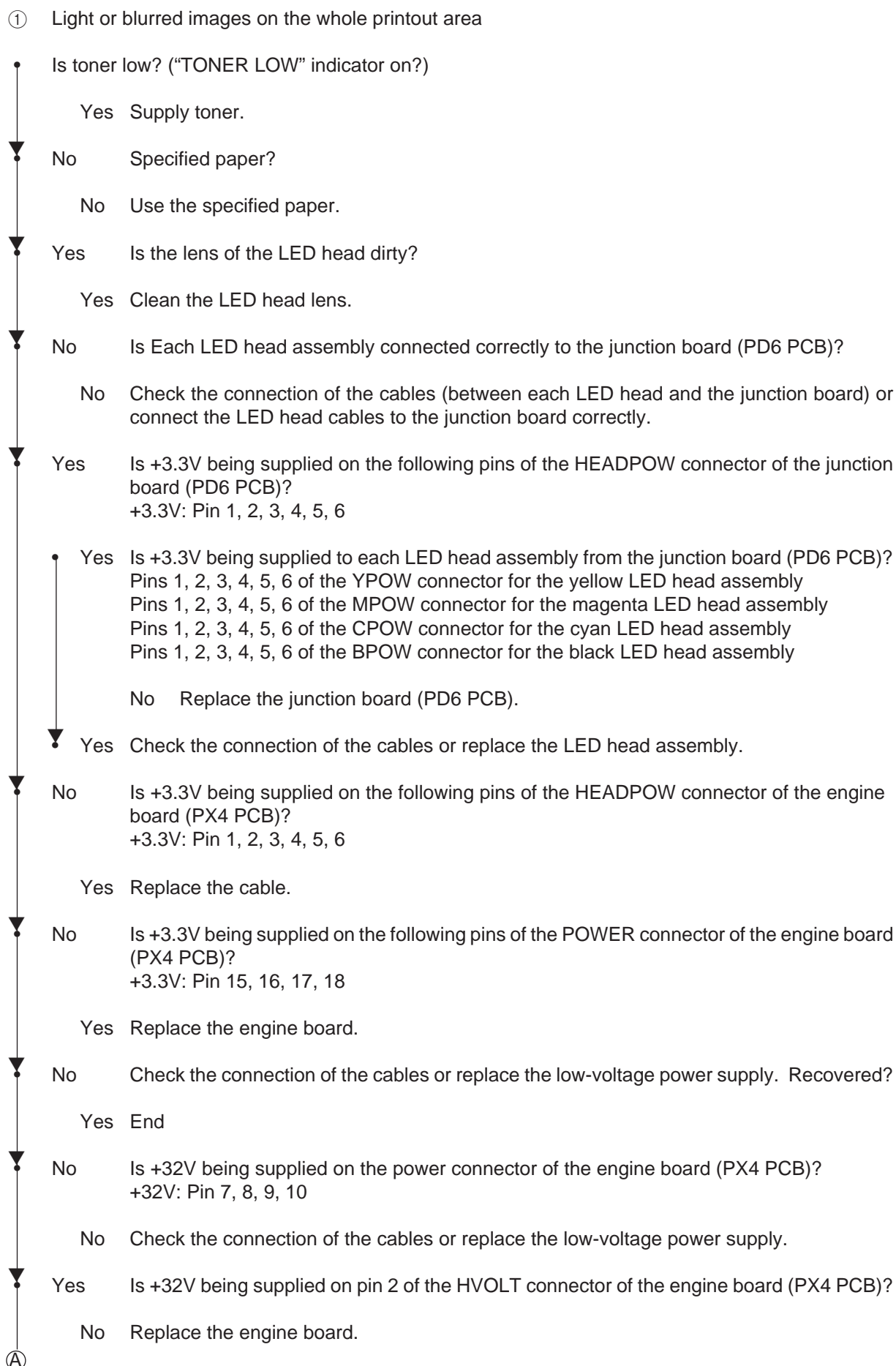


Ⓔ Cyclical defect



Ⓕ White belts or streaks in the vertical direction

Figure 6.2



Ⓐ



Yes Check the connection of the cables, replace the high-voltage power supply, or belt cassette assembly. Recovered?

Yes End



No Is Each terminal of each image drum unit connected correctly to the contact assembly? (See Figure 6.2.)

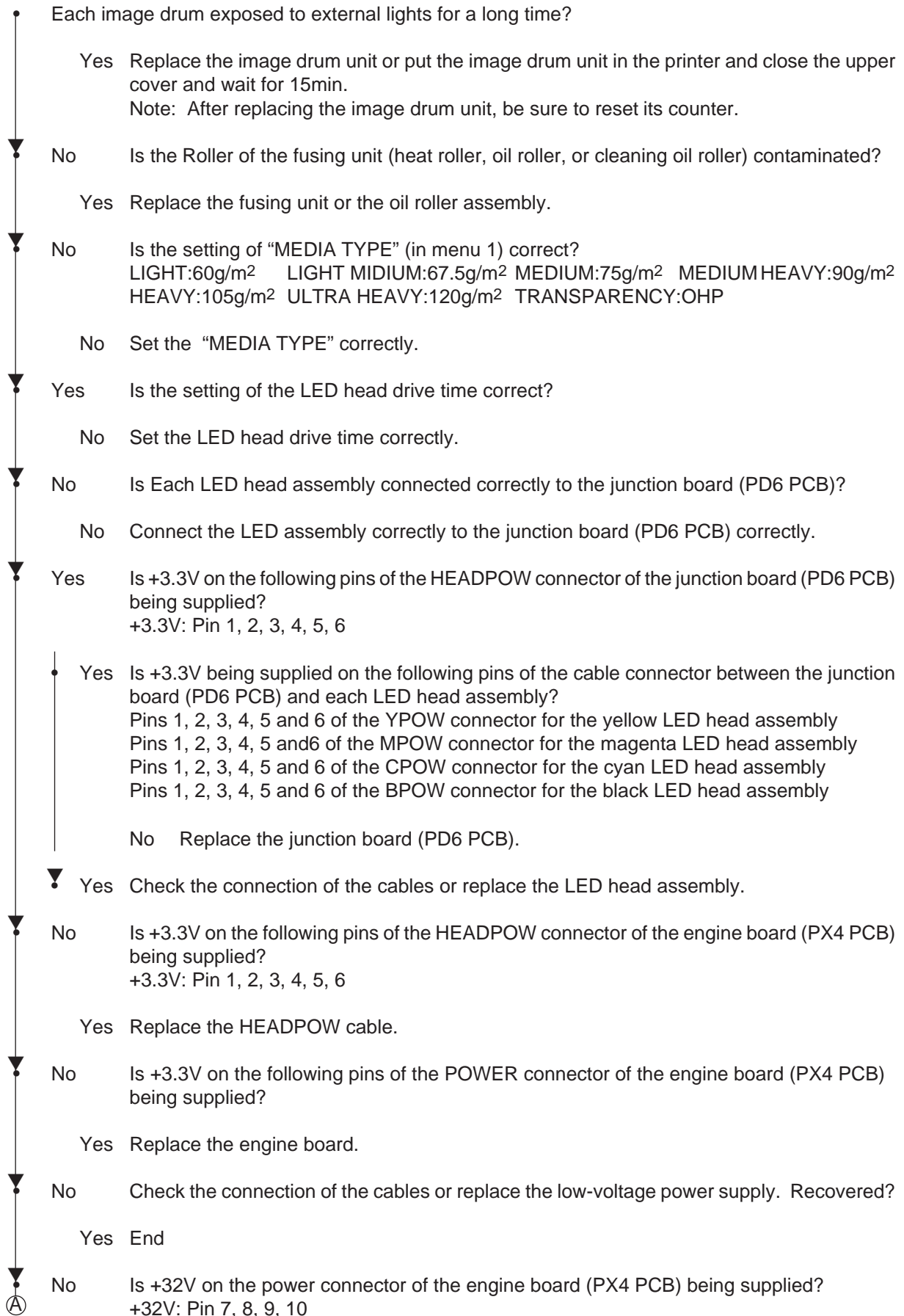
No Make the terminals be in contact with the contact assembly correctly.

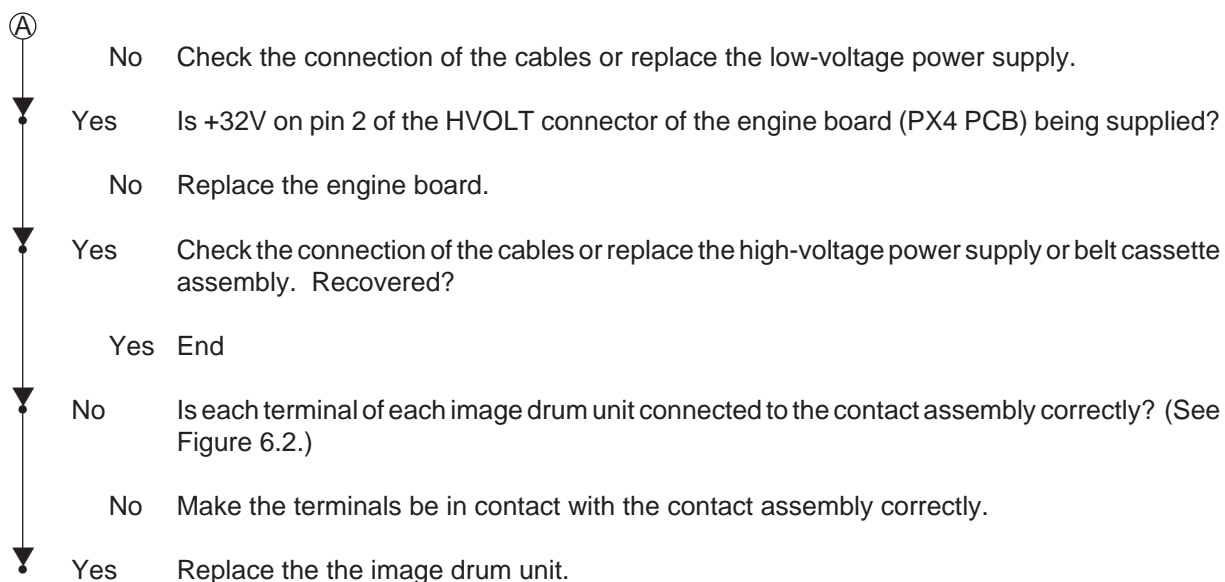


Yes Replace the the image drum unit.

- Notes:
1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit and the belt cassette assembly, be sure to reset their counters in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

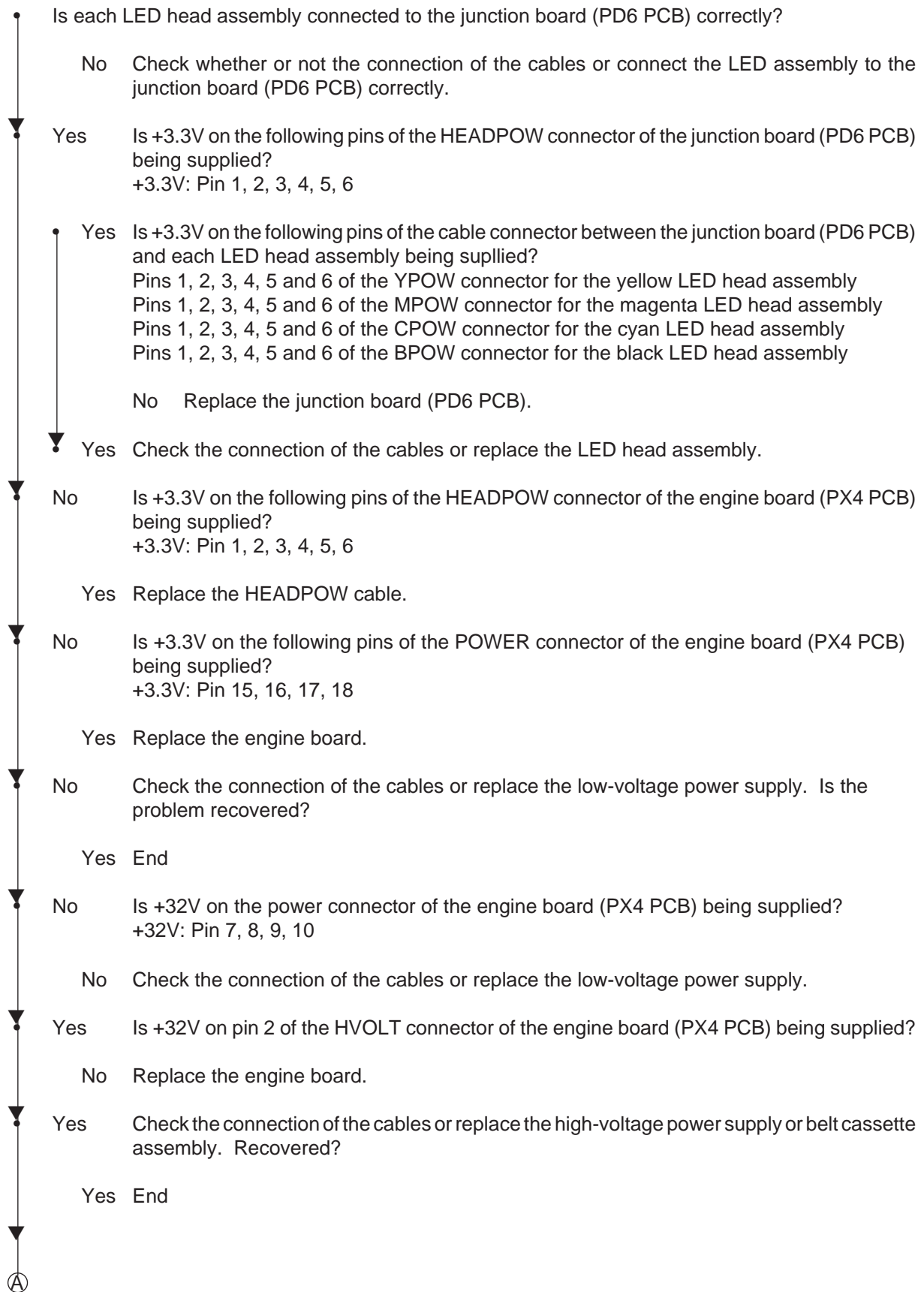
② Dirty stained ground (Figure 6.2-B)





- Notes:
1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit and the belt cassette assembly, be sure to reset their counters in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

③ Void print out



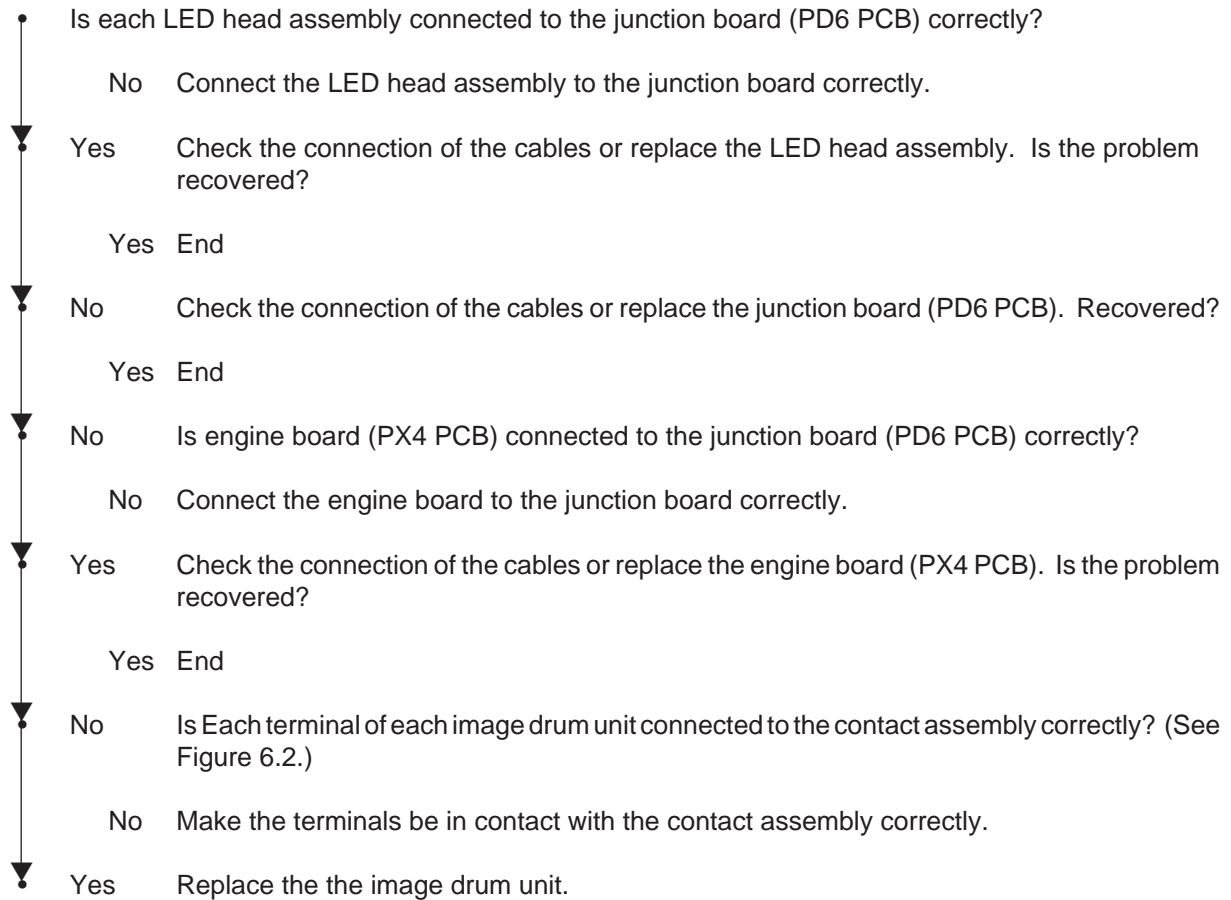
Ⓐ



- | | |
|-----|---|
| No | Is each terminal of each image drum unit connected to the contact assembly correctly? (See Figure 6.2.) |
| No | Make the terminals be in contact with the contact assembly correctly. |
| Yes | Replace the the image drum unit. |

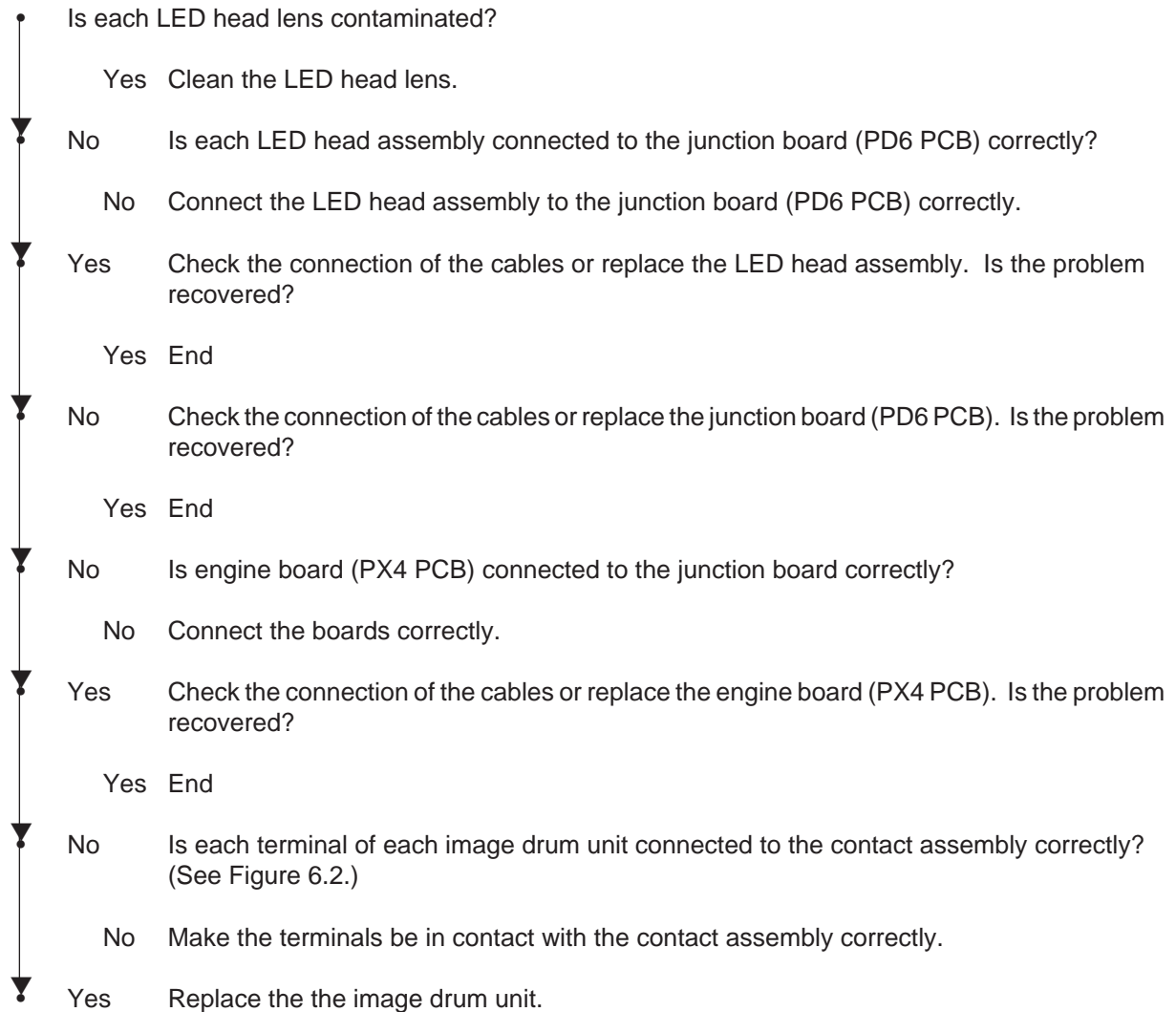
Notes: 1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
2. After replacing the image drum unit and the belt cassette assembly, be sure to reset their counters in the User Maintenance mode.
3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

④ Black stripe or lines in the vertical direction



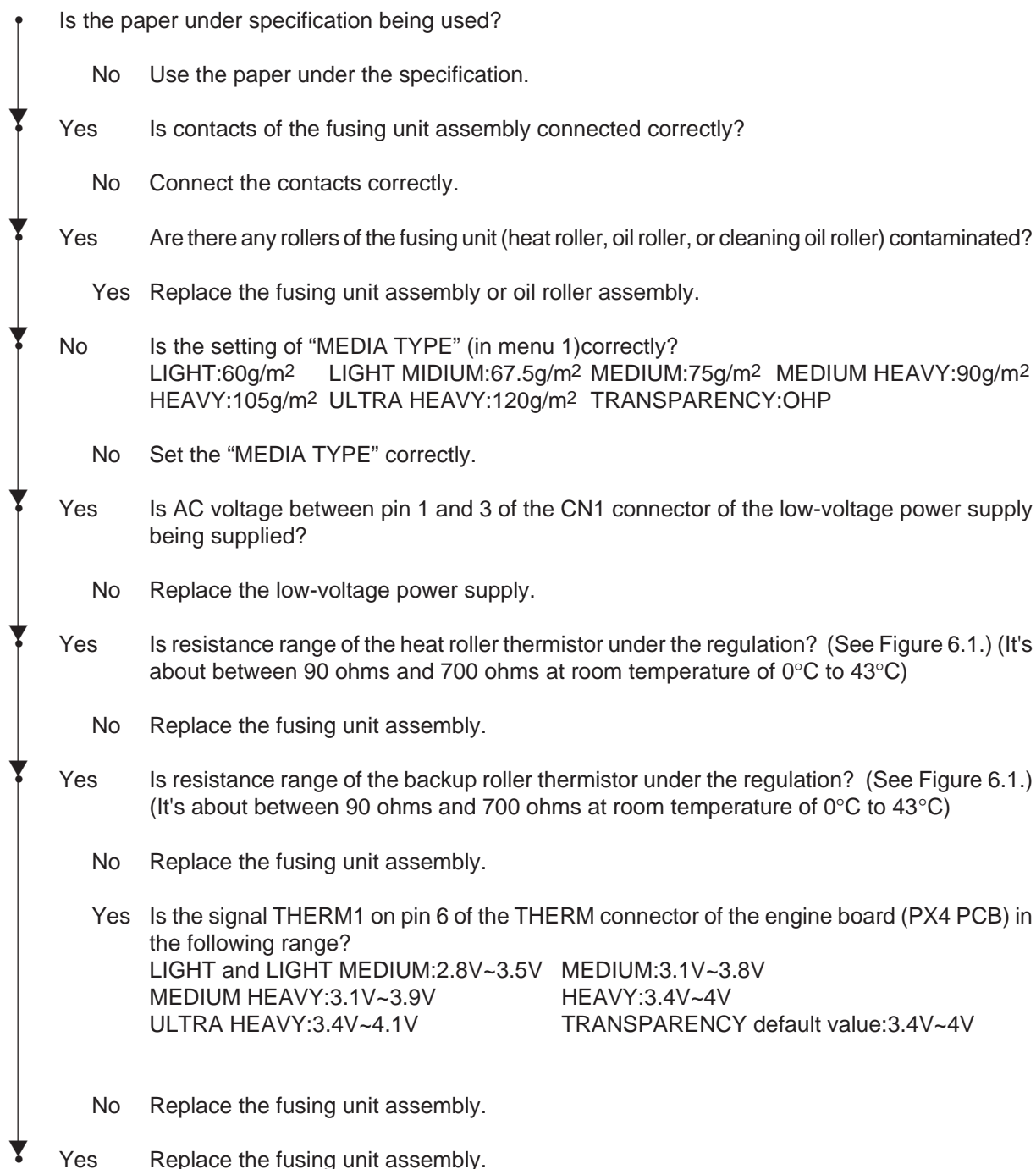
- Notes:
1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit, be sure to reset its counter in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

⑤ White stripe or lines in the vertical direction



- Notes:
1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit, be sure to reset its counter in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

⑥ Poor Fusing (Image are blurred or peeled off when touched with finger.)



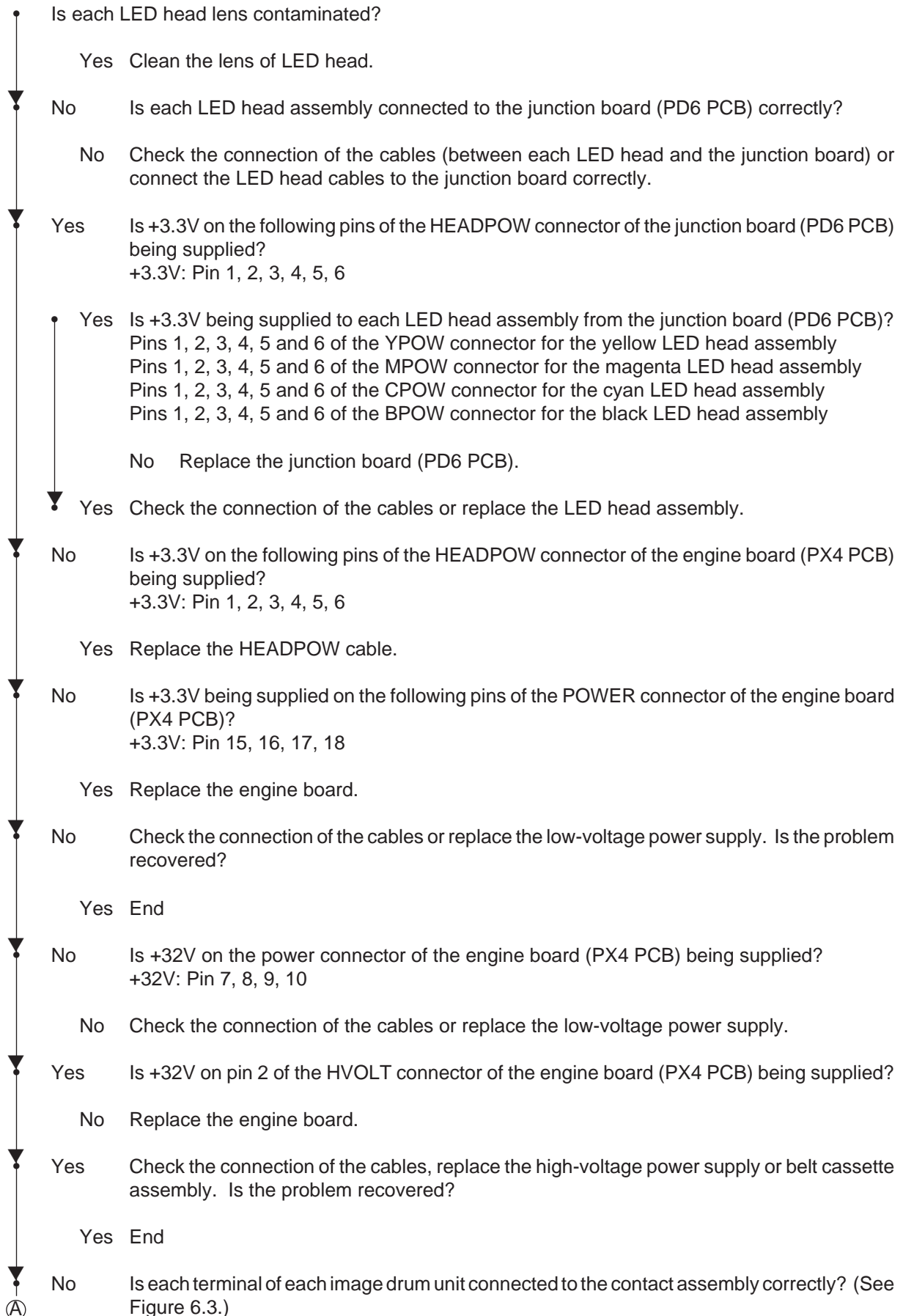
- Notes:
1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit, the fusing unit, and the belt cassette assembly, be sure to reset their counters in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

⑦ Cyclical printout defects (Figure 6.2-E)

Possibly defective part		Repairing
94.2 mm	Image Drum	Replace the image drum unit.
44.0 mm	Developing Rooler	Replace the image drum unit.
28.3 mm	Toner Supply Rooler	Replace the image drum unit.
28.3 mm	Charging Roller	Replace the image drum unit.
114 mm	Heat Roller	Replace the fusing unit assembly.
114 mm	Back-up Roller	Replace the fusing unit assembly.
47.1 mm	Transfer Roller	Replace the belt cassette assembly.

Note: After replacing the image drum unit the fusing unit and the belt cassette assembly, be sure to reset their counters in the User Maintenance mode.

⑧ Missing characters or synthesization colors



Ⓐ

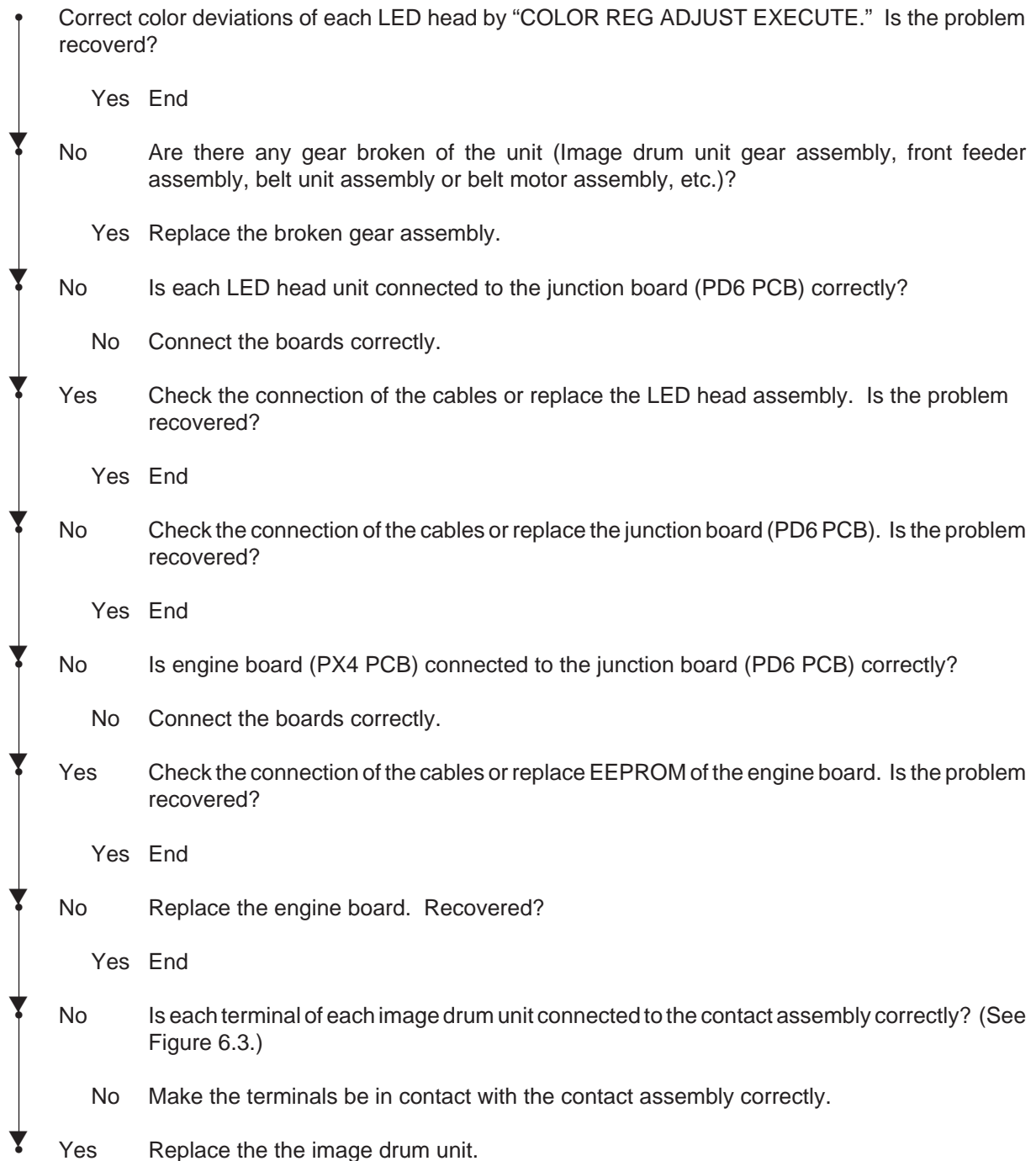


No Make the terminals be in contact with the contact assembly correctly.

Yes Replace the the image drum unit.

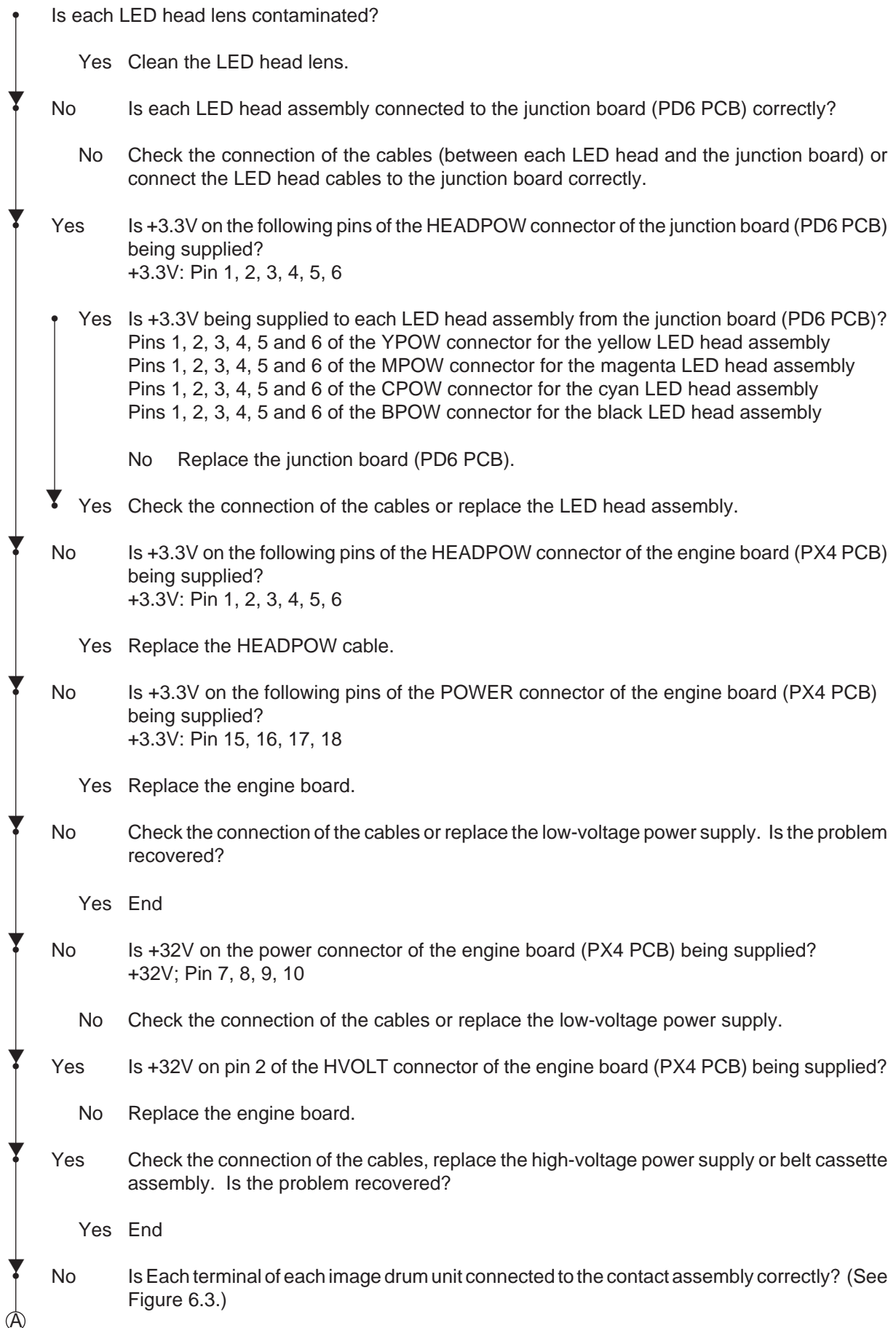
- Notes:
1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit and the belt cassette assembly, be sure to reset their counters in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

⑨ Poor synthesization Colors



Notes: 1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit, be sure to reset its counter in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

⑩ Printout colors different from original colors



Ⓐ



No Make the terminals be in contact with the contact assembly correctly.

Yes Replace the the image drum unit.

- Notes:
1. When replacing the engine board (PX4 PCB), demount the EEPROM chip from the old engine board and remount it on the new one.
 2. After replacing the image drum unit and the belt cassette assembly, be sure to reset their counters in the User Maintenance mode.
 3. After replacing the LED head assembly, be sure to adjust its drive time and correct its color deviation.

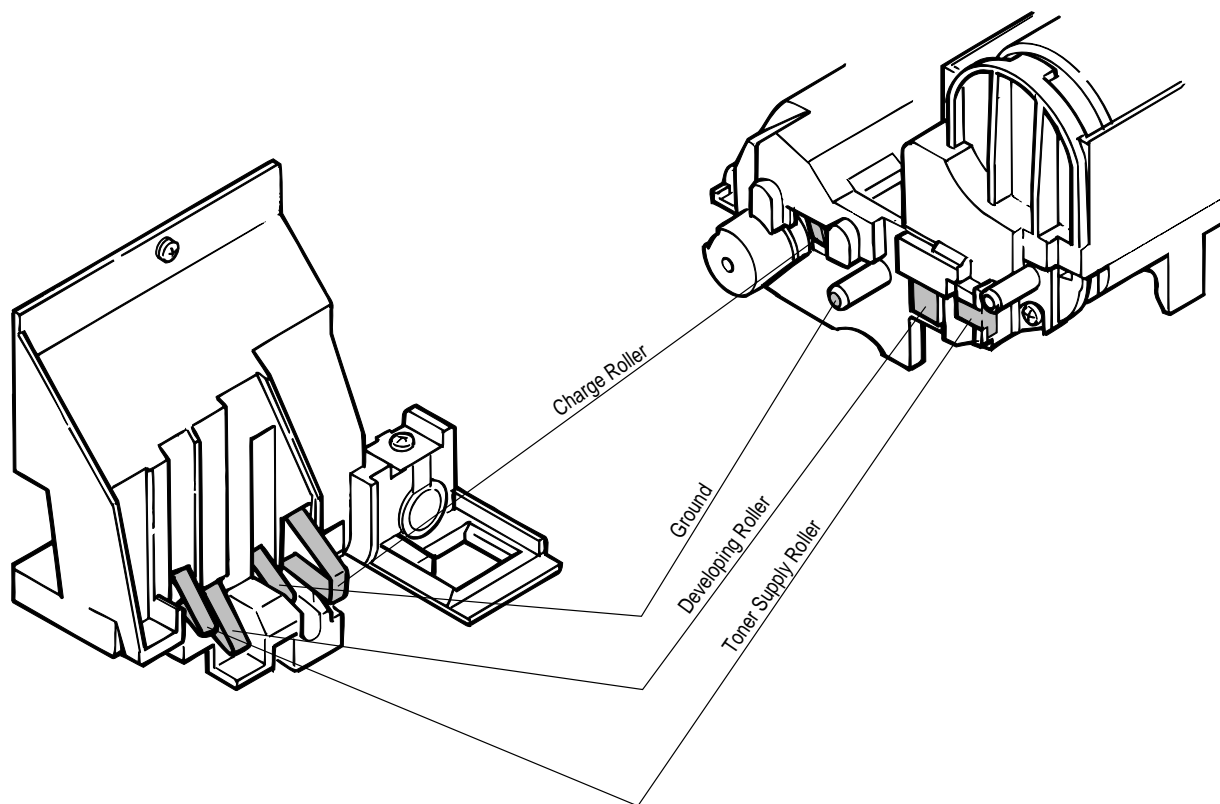
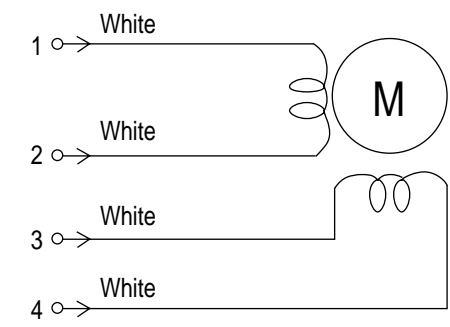
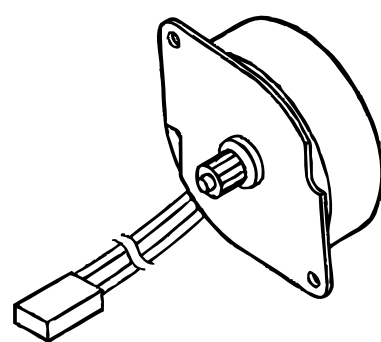
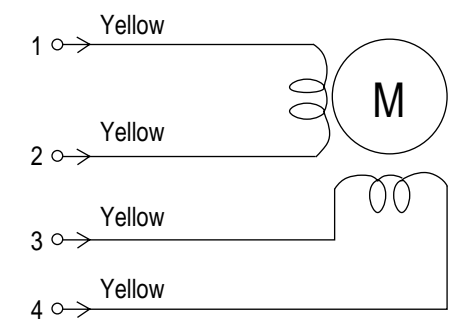
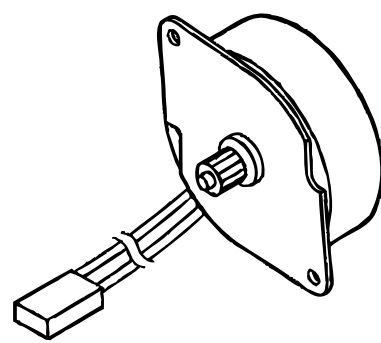
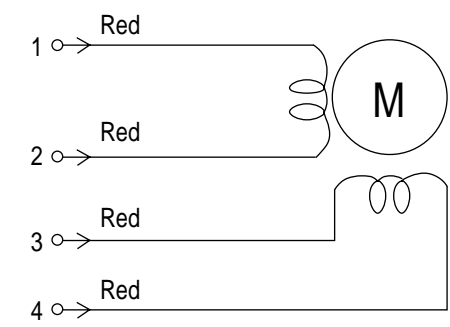
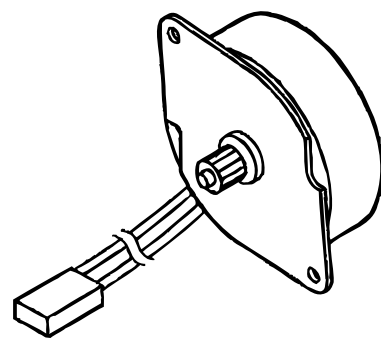
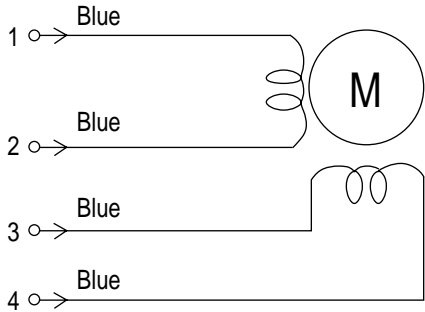
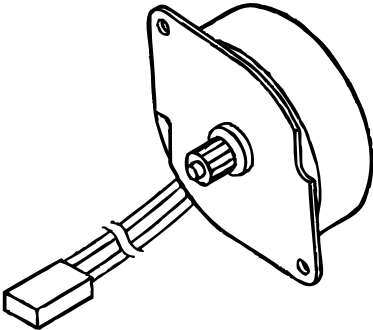
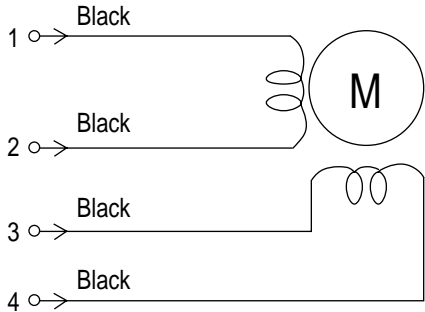
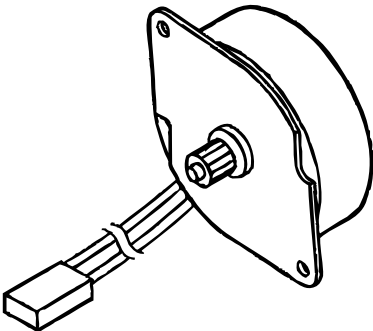
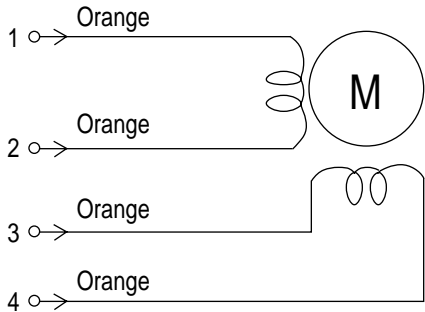
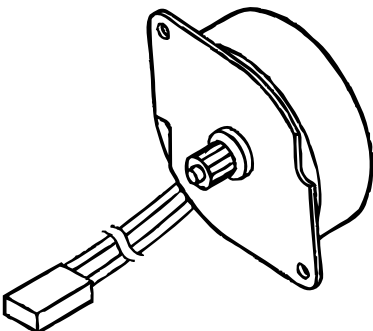


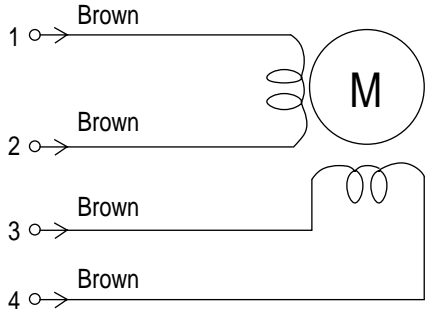
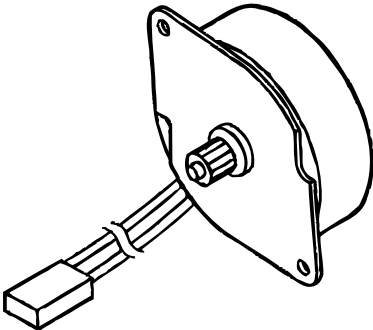
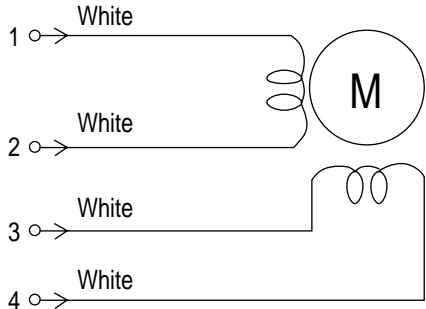
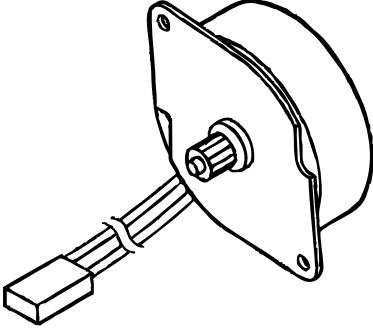
Figure 6.3

7. WIRING DIAGRAM

7.1 Resistance Check

Unit	Circuit Diagram	Illustration	Resistance
Belt motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω
YIDU motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω
MIDU motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω

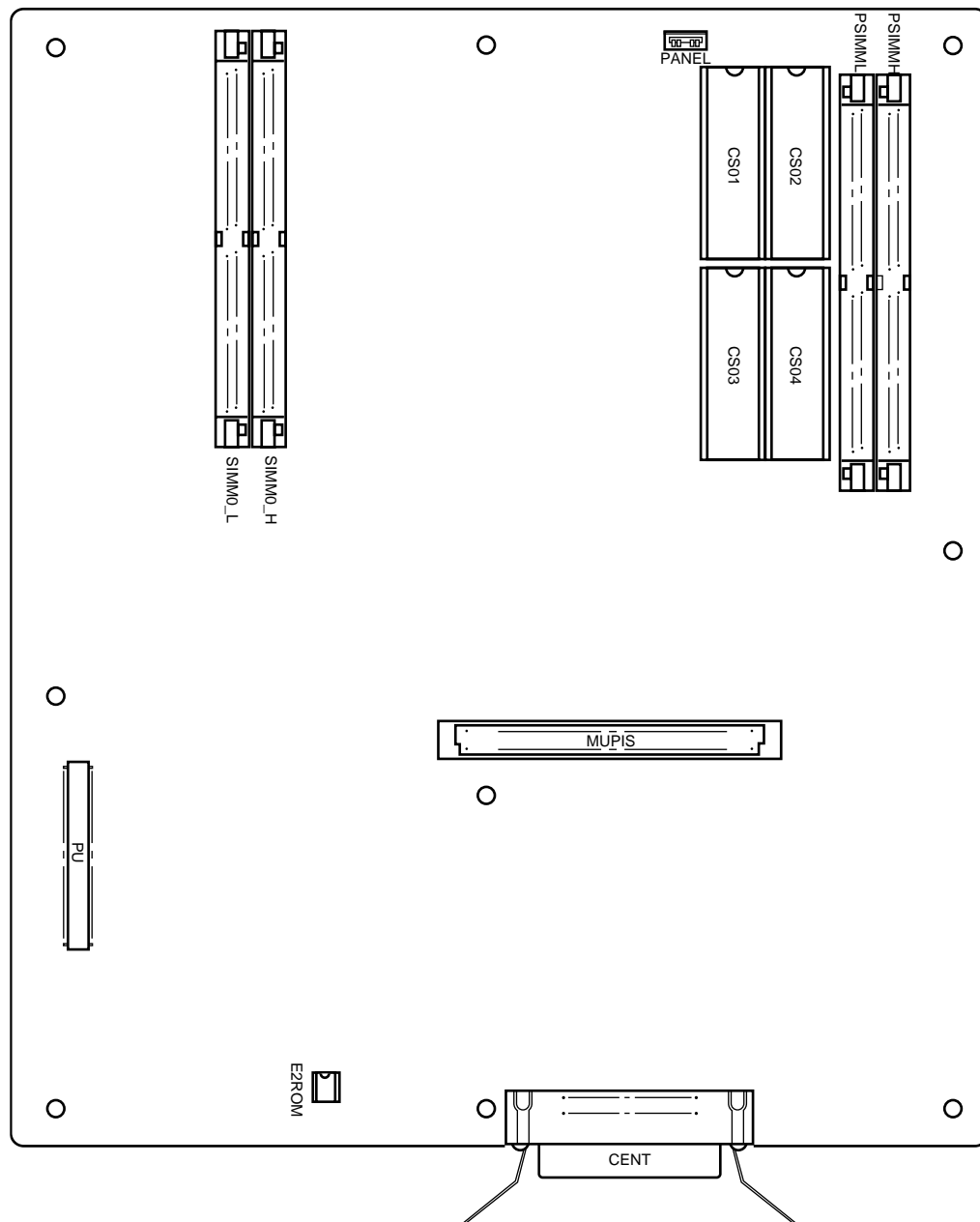
Unit	Circuit Diagram	Illustration	Resistance
CIDU motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω
BIDU motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω
Resist motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω

Unit	Circuit Diagram	Illustration	Resistance
Heater motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω
FF motor			Between pins 1 and 2: 7.1Ω Between pins 3 and 4: 7.1Ω

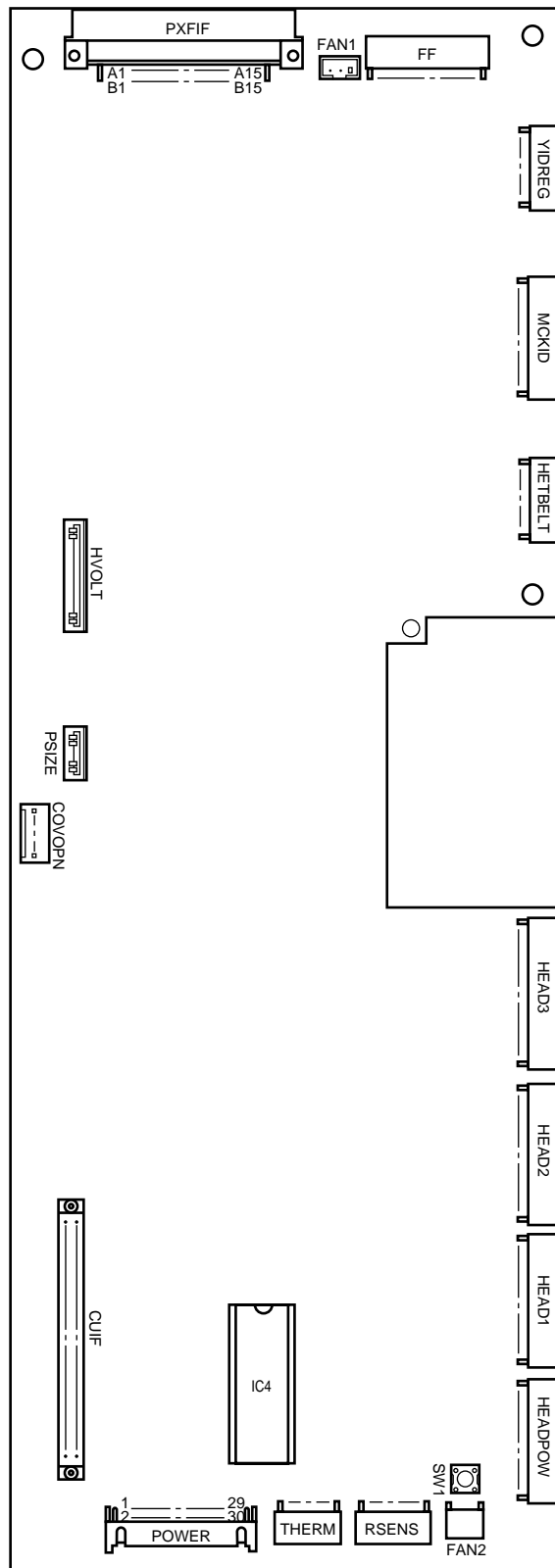
Unit	Circuit Diagram	Illustration	Resistance
Fan 1 (To: Low Power supply)			
Fan 2 (To: PX4-PCB)			
Fusing Unit			<p>Between pins c and d: 205kΩ (at 25°C) Between pins e and f: 205kΩ (at 25°C) Between pins a and b: 2.3Ω (120V, at 25°C) 8.5Ω (240V, at 25°C)</p>

7.2 Program/Font ROM Location

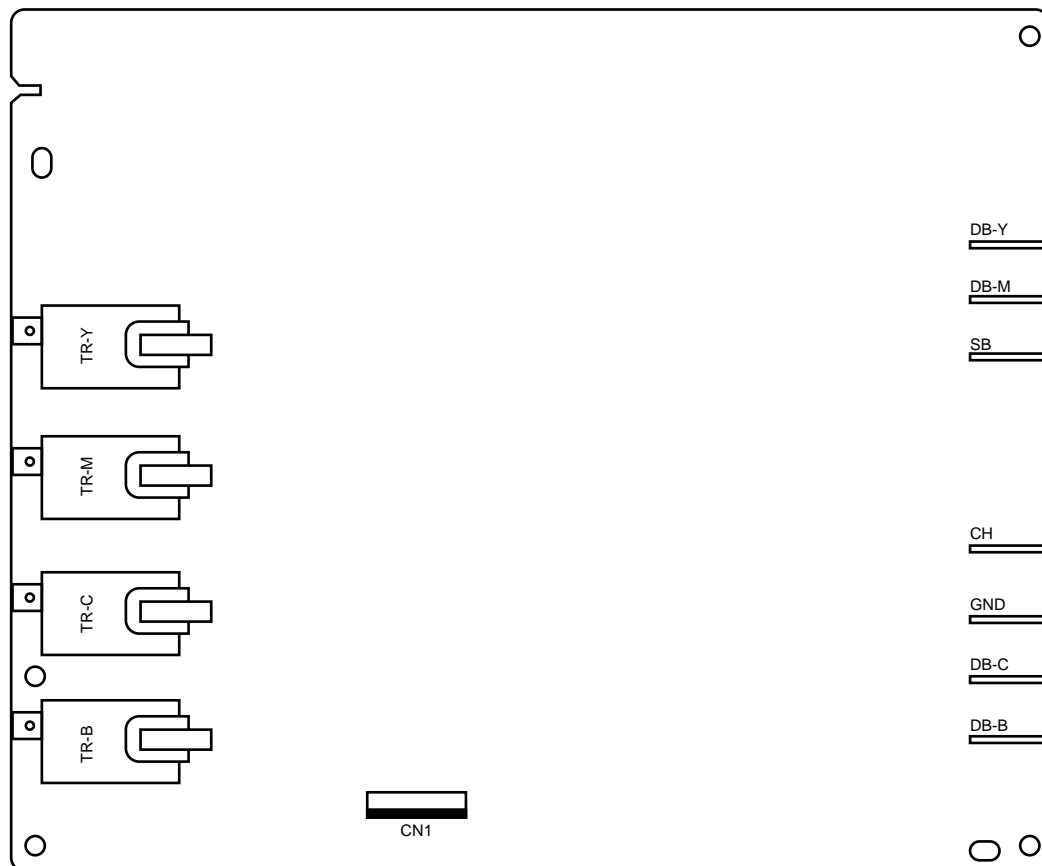
(1) PCR-PCB



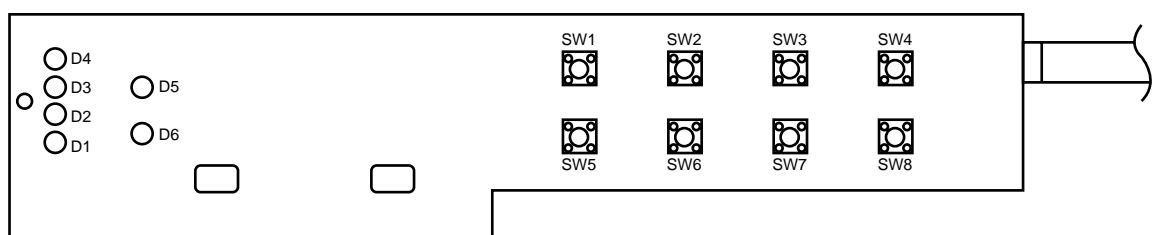
(2) PX4-PCB



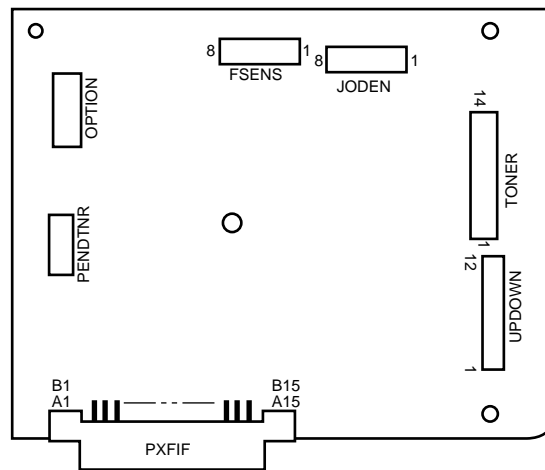
(3) Power-Supply PCB



(4) PCO PCB



(5) PXF PCB



8. Parts List

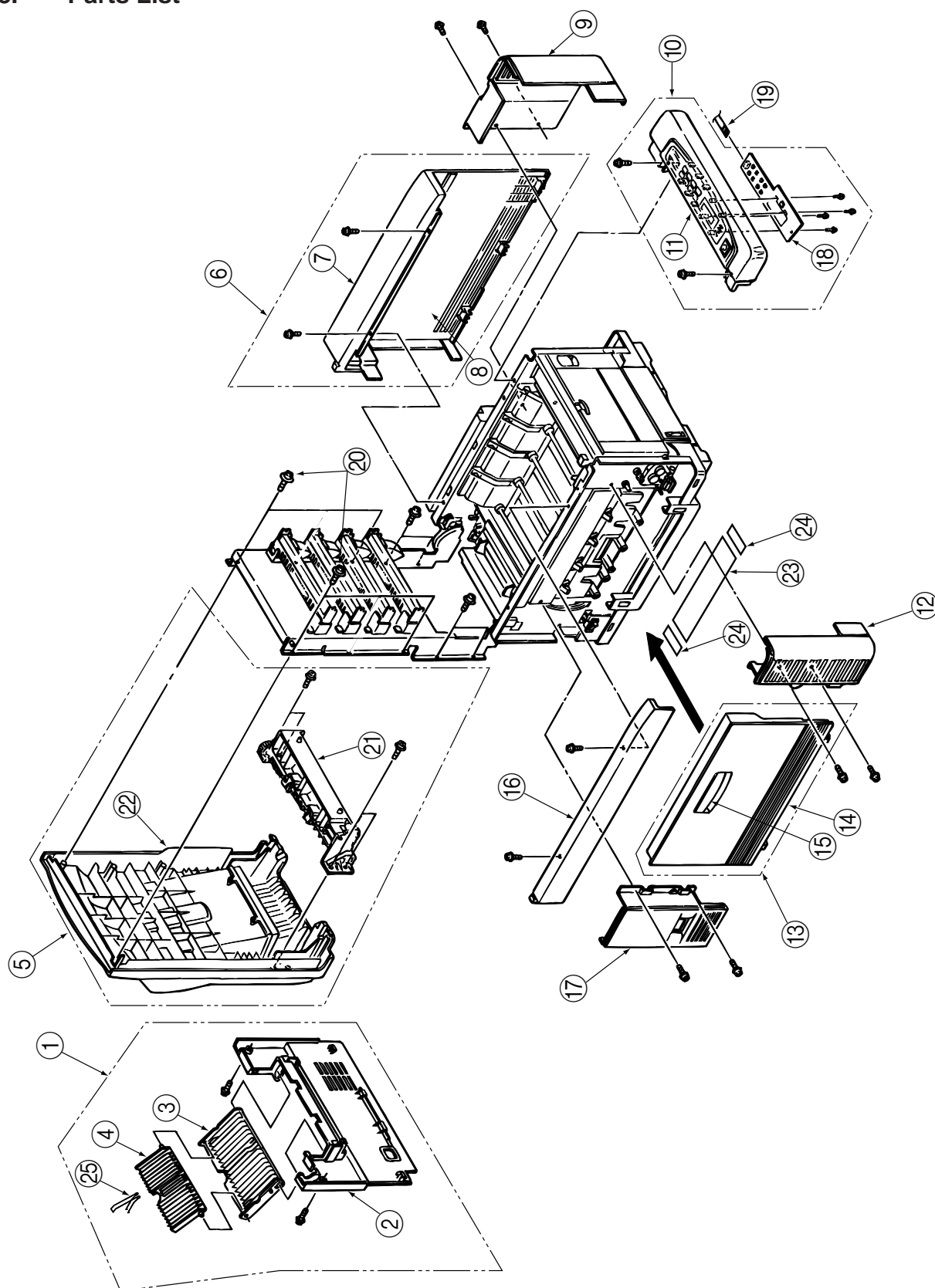


Fig.8-1

Table.8-1

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40315201	Cover_Assy_Rear	1	3	6	12	
2	40098401	Cover_Rear	1	3	6	12	
3	40187501	Stacker_Faceup	1	3	6	12	
4	40187601	Support_Stacker	1	3	6	12	
5	40314801	Cover_Assy_Stacker	1	3	6	12	
6	40315001	Cover_Assy_Side (R)	1	3	6	12	
7	-	Cover_Side (R)	-	-	-	-	
8	-	Frame_Side (R)	-	-	-	-	
9	40098301	Cover_Front (R)	1	3	6	12	
10	40314901	Cover_Assy_OP_Panel	1	3	6	12	ODA(120/230V)
	40314902	Cover_Assy_OP_Panel	1	3	6	12	OEL/INT(230V)
11	40492601	Cover_Sub_Assy_OP_Panel	1	3	6	12	
12	40098201	Cover_Front (L)	1	3	6	12	
13	40315101	Cover_Assy_Side (L)	1	3	6	12	
14	-	Cover_Side (L)	-	-	-	-	
15	-	Cover_Knob	-	-	-	-	
16	40195601	Frame_Side (L)	1	3	6	12	
17	40195701	Cover_Rear (L)	1	3	6	12	
18	40387201	Board-PCO	1	3	6	12	
19	40919301	Connection Code Sumi Cord Assy	1	3	6	12	
20	4PB4083-5670P001	Screw	4	12	24	48	
21	40303601	Guide_Eject_FD_Assy	1	3	6	12	
22	40449901	Cover_Sub_Assy_Stacker	1	3	6	12	
23	40728601	Film_Waste_Toner	1	3	6	12	
24	40728701	Foam-Seal (Cover)	2	6	12	24	
25	40664701	Spring-Support (FU)	1	3	6	12	

Fig.8-2

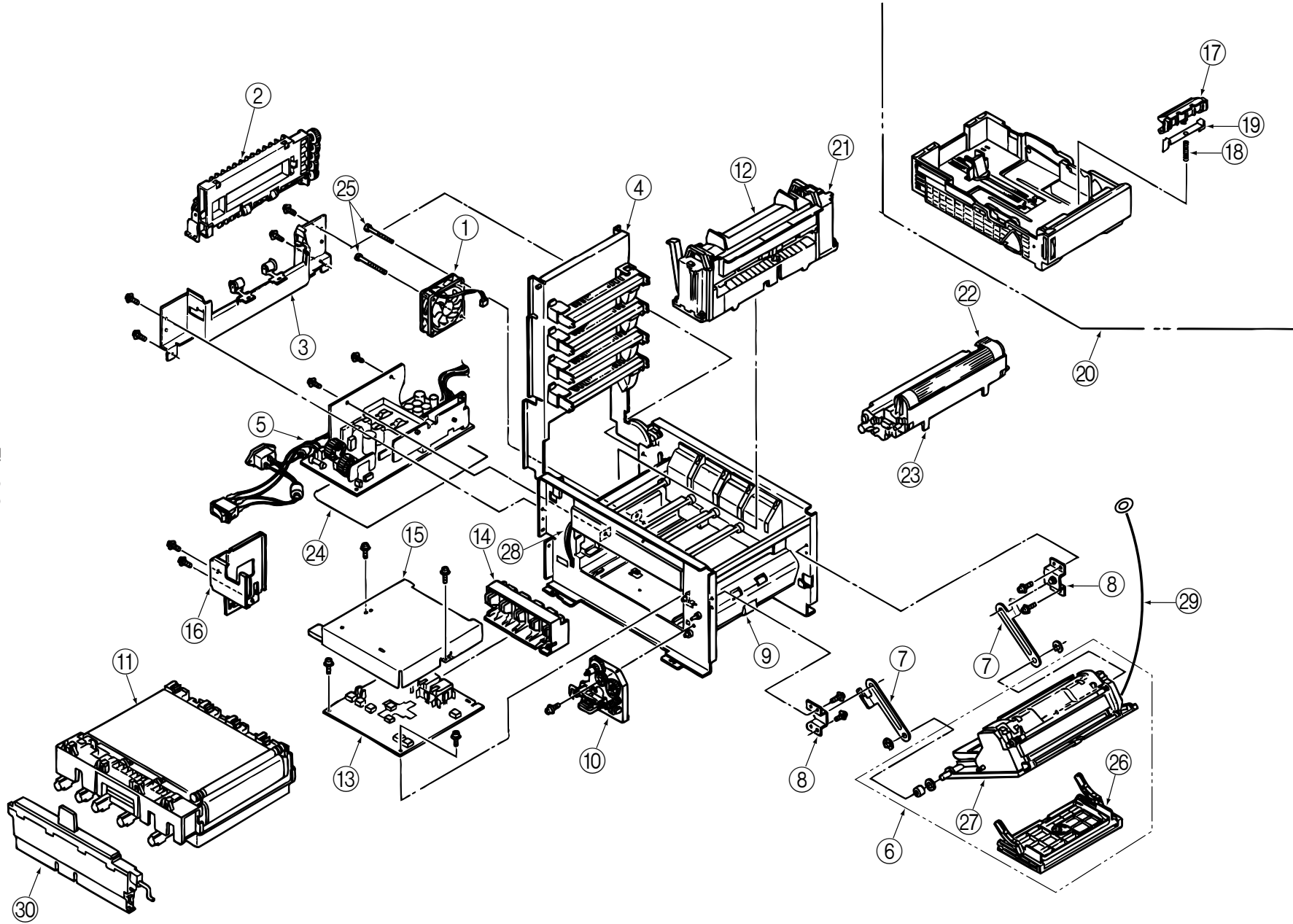


Table.8-2

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40255201	Motor_Fan(80-25)	1	3	6	12	
2	40303501	Frame_Eject_Assy	1	3	6	12	
3	40303401	Guide_Paper_Eject_Assy	1	3	6	12	
4	40410701	Frame_Upper_Assy	1	3	6	12	See Fig.8-8
5	40018901	Power_Unit_ACDC_Switching	1	3	6	12	ODA(120V)
	40019001	Power_Unit_ACDC_Switching	1	3	6	12	OEL/ODA(230V)
6	40311201	FDR_Unit_Front	1	3	6	12	
7	40193501	Plate_FF_Link	2	6	12	24	
8	40193601	Bracket_FF_Link	2	6	12	24	
9	40303301	Guide_Paper_Input_Assy	1	3	6	12	
10	40309801	Holder_Gear_Toner_Assy	1	3	6	12	
11	40490801	Belt_Unit	1	3	6	12	Replacement Kit (ODA)
	40490802	Belt_Unit	1	3	6	12	Replacement Kit (OEL/INT)
12	40645301	Oil_Roller_Unit	1	-	-	-	Consumable: ODA
	40645302	Oil_Roller_Unit	1	-	-	-	Consumable: OEL/INT
13	40065601	High_Voltage_Power_Supply	1	3	6	12	
14	40325001	Bracket_HV(BT)_Assy	1	3	6	12	
15	40168001	Plate_HV	1	3	6	12	
16	40193201	Holder_Innret	1	3	6	12	
17	40607001	Separator_Frame_Assy	1	3	6	12	
18	40744501	Separation_Spring	1	3	6	12	
19	40093802	Damper_Spring_Assy	1	3	6	12	
20	40744401	Paper_Cassette_Assy	1	3	6	12	
21	40490901	Fuser_Unit	1	3	6	12	Replacement_Unit: ODA(120V)
	40490902	Fuser_Unit	1	3	6	12	Replacement_Unit: (OEL/INT)
	40490904	Fuser_Unit	1	3	6	12	Replacement_Unit: ODA(230V)
22	40370601	Toner_Cartridge_BK	1	-	-	-	Consumable: ODA
	40370602	Toner_Cartridge_Y	1	-	-	-	Consumable: ODA
	40370603	Toner_Cartridge_M	1	-	-	-	Consumable: ODA
	40370604	Toner_Cartridge_C	1	-	-	-	Consumable: ODA
	40370701	Toner_Cartridge_BK	1	-	-	-	Consumable: OEL
	40370702	Toner_Cartridge_Y	1	-	-	-	Consumable: OEL
	40370703	Toner_Cartridge_M	1	-	-	-	Consumable: OEL
	40370704	Toner_Cartridge_C	1	-	-	-	Consumable: OEL

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
23	40370201	ID_Unit_C6C_ODAEPCFGI-BK	1	-	-	-	Consumable: ODA(120V)
	40370301	ID_Unit_C6C_ODAEPCFGI-YM	1	-	-	-	Consumable: ODA(120V)
	40370302	ID_Unit_C6C_ODAEPCFGI-MM	1	-	-	-	Consumable: ODA(120V)
	40370303	ID_Unit_C6C_ODAEPCFGI-CM	1	-	-	-	Consumable: ODA(120V)
	40370401	ID_Unit_C6C_OELEPCFGI-BK	1	-	-	-	Consumable: OEL(230V)
	40370501	ID_Unit_C6C_OELEPCFGI-YM	1	-	-	-	Consumable: OEL(230V)
	40370502	ID_Unit_C6C_OELEPCFGI-MM	1	-	-	-	Consumable: OEL(230V)
	40370503	ID_Unit_C6C_OELEPCFGI-CM	1	-	-	-	Consumable: OEL(230V)
24	40191201	Sheet_Insuration	1	3	6	12	
25	PSW2W3-30C	Screw	2	6	12	24	
26	40838801	Manual_Hopper_Assy	1	3	6	12	
27	40449001	FDR_Unit_Main_Assy	1	3	6	12	
28	40294201	CONN_Cord_Wire	1	3	6	12	
29	40641801	CONN_Cord_Wire	1	3	6	12	
30	40645401	Waste_Toner_Box	1	3	6	12	Consumable(ODA)
	40645402	Waste_Toner_Box	1	3	6	12	Consumable(OEL/INT)

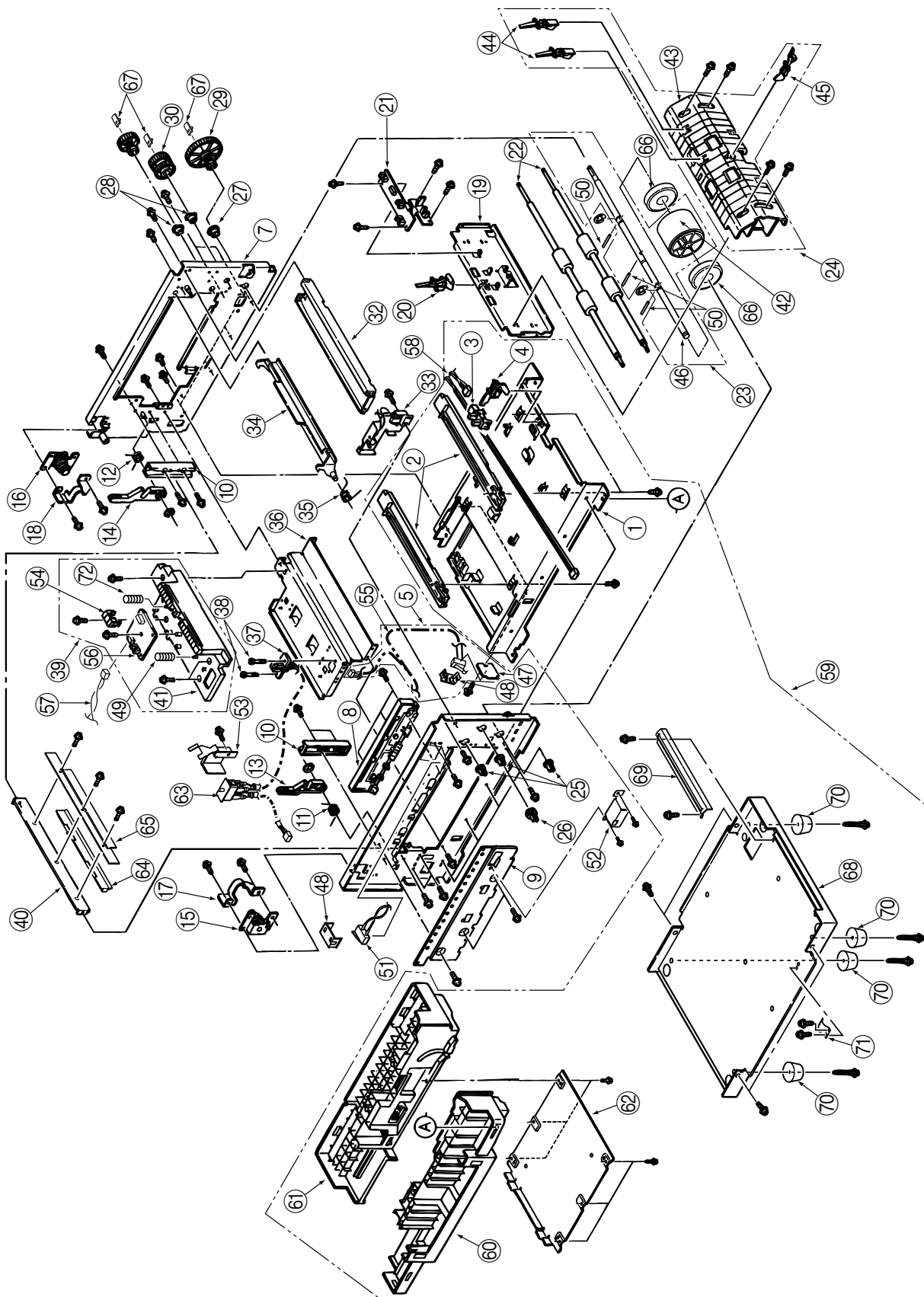


Fig.8-3

Table.8-3

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40175701	Plate_Base	1	3	6	12	
2	40096401	Guide_Belt(F)	2	6	12	24	
3	40135301	Photo_Interrupter	1	3	6	12	
4	4PP4076-5154P001	Lever_Paper_End	1	3	6	12	
5	40450401	Sensor_Assy_Box_Toner	1	3	6	12	
6	40171401	Frame_Side(L)	1	3	6	12	
7	40171301	Frame_Side(R)	1	3	6	12	
8	40308801	Contact_SB_Assy	1	3	6	12	
9	40290201	Plate_Blind	1	3	6	12	
10	40163401	Guide_Side_Heatunit	2	6	12	24	
11	40163701	Spring_Lock(L)	1	3	6	12	
12	40835001	Spring_Lock_Heat	1	3	6	12	
13	40163501	Lever_Lock_Heatunit(L)	1	3	6	12	
14	40163601	Lever_Lock_Heatunit(R)	1	3	6	12	
15	40383701	Limiter-2Way(L)	1	3	6	12	
16	40383801	Limiter-2Way(R)	1	3	6	12	
17	40335001	Plate_Guard(L)	1	3	6	12	
18	40335101	Plate_Guard(R)	1	3	6	12	
19	40171201	Stay_Lower(Front)	1	3	6	12	
20	40144501	Lever_Regist_Sensor	1	3	6	12	
21	40437601	Board-PXM	1	3	6	12	
22	40130801	Roller_Registration	2	6	12	24	
23	40310601	Roller_Assy_Hopping	1	3	6	12	
24	40303301	Guide_Paper_Input_Assy	1	3	6	12	
25	40261301	Bearing_Hopping	3	9	18	36	
26	40130301	Gear(Z20)	1	3	6	12	
27	4PP4076-5308P001	Bearing_F	1	3	6	12	
28	4PP4076-3949P001	Bush	2	6	12	24	
29	40250901	Gear_Oneway(96)	1	3	6	12	
30	40164501	Gear_Oneway(Z48/48)	1	3	6	12	
31	40164301	Gear_Oneway(Z48)	1	3	6	12	
32	40171101	Stay_Upper(Front)	1	3	6	12	
33	40388501	Bracket_SW	1	3	6	12	
34	40195101	Plate_Latchlever(FD)	1	3	6	12	
35	40195001	Spring_Latchlever(FD)	1	3	6	12	
36	40175201	Stay_Heat	1	3	6	12	
37	40563101	Connection_cord_wire	1	3	6	12	

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
38	4PB4043-4718P001	Screw	2	6	12	24	
39	40162101	Guide_Assy_Heat_Unit	1	3	6	12	
40	40175101	Stay_EP	1	3	6	12	
41	40449401	Guide_Assy_Heat	1	3	6	12	
42	40449701	Hopping_Roller_Boss_Assy	1	3	6	12	
43	40097301	Guide_Paper_Input_A	1	3	6	12	
44	40144301	Lever_Input_Sensor	2	6	12	24	
45	40144401	Lever_2ndFeed_Sensor	1	3	6	12	
46	40189601	Shaft_Hoppingroller(1st)	1	3	6	12	
47	40450201	Bracket_Switch	1	3	6	12	
48	40408601	Holder_Switch	4	12	24	48	
49	40264401	Spring_Eject_Heat	1	3	6	12	
50	NK3-18-SUS	Knock_Pinn	1	3	6	12	
51	40447201	CONN_Cord_Wire	1	3	6	12	
52	40388401	Bracket_Switch(Side)	1	3	6	12	
53	40446501	InterLock_SW_Cable_Assy	1	3	6	12	
54	40162201	Cover_Sensor	1	3	6	12	
55	(40172401)	(AMP6P-AMP4P)	(1)	(3)	(6)	(12)	Designated in Fig.8-5
56	40437501	Board-PXL	1	3	6	12	
57	40171801	Cordwire_AMP7P_AMP7P	1	3	6	12	
58	40447301	Cordwire_JST6P_AMP3PX2	1	3	6	12	
59	40303201	Plate_Base_Assy	1	3	6	12	
60	40303101	Guide_Cassette(L)Assy	1	3	6	12	
61	40302901	Guide_Cassette(R)Assy	1	3	6	12	
62	40164801	Plate_Bottom	1	3	6	12	
63	40448501	Conection_cord_wire	1	3	6	12	
64	40551301	Plate_Shield_Heat	1	3	6	12	
65	40714401	Heat-Sink(801)	1	3	6	12	
66	40743701	Roller Ass-Hopping(Sub)	2	6	12	24	
67	40686701	Spacer-Regist_gear	3	9	18	36	
68	40661001	Cover-Bottom(Weld)	1	3	6	12	
69	40661501	Plate-Guide	1	3	6	12	
70	40671001	Rubber-Foot	4	12	24	48	
71	4PB4017-5125P002	Big-Finger	1	3	6	12	
72	40834901	Spring-Eject-Heat	1	3	6	12	

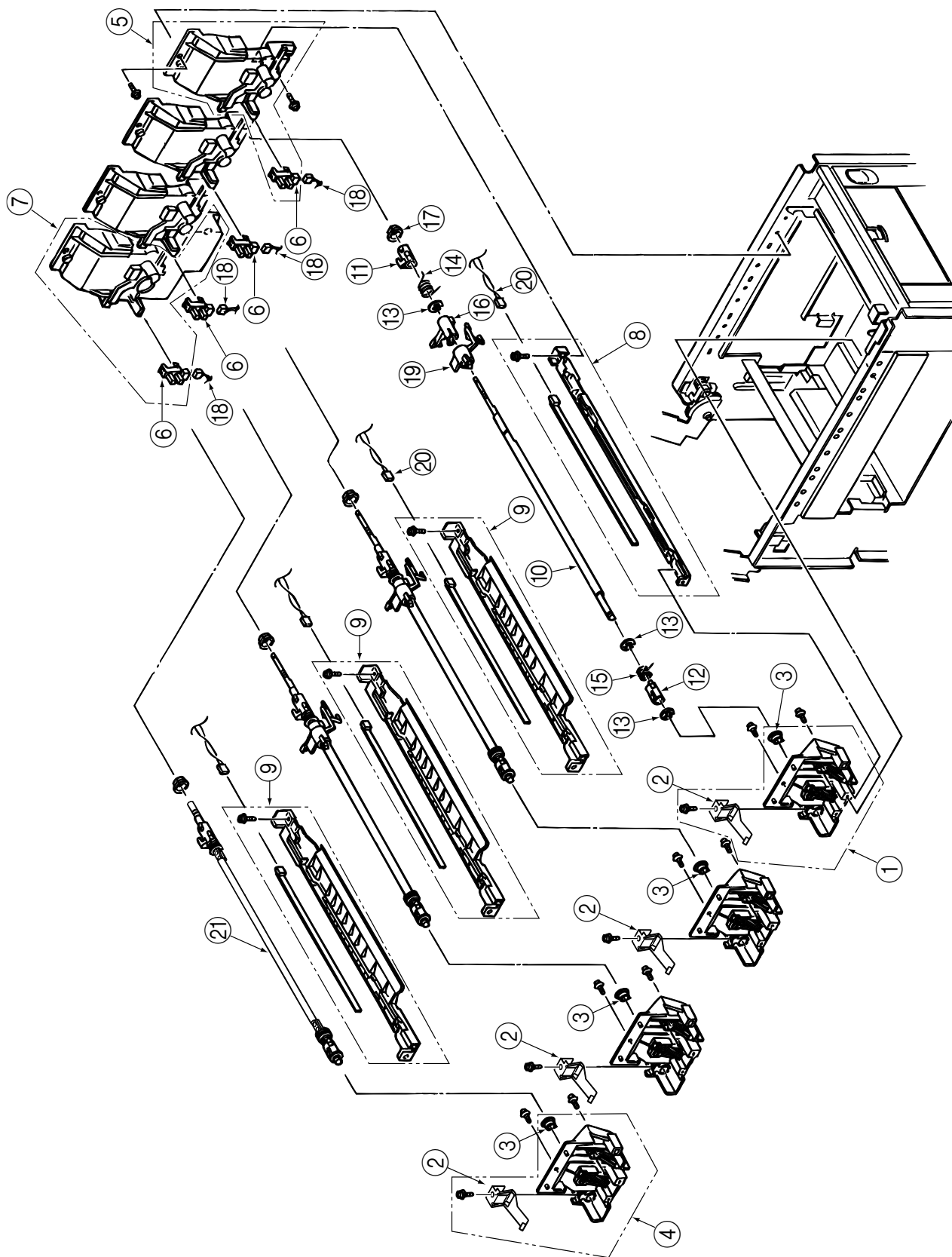


Fig.8-4

Table.8-4

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40324501	Cotact_(BL_L)Assy	3	9	18	36	Includes Item2, 3
2	40278101	Plate_Earth(LK)	1	3	6	12	
3	4PP4076-5308P001	Bearing	1	3	6	12	
4	40324401	Contact_(CL_L)Assy	1	3	6	12	Includes Item2, 3
5	40324601	Contact_BKT(BL_R)Assy	3	9	18	36	Includes Item6
6	40135301	Photo_Interrupter	1	3	6	12	
7	40309001	Contact_BKT(CL_R)Assy	1	3	6	12	Includes Item6
8	40308501	Eraser_BKT_Assy	1	3	6	12	
9	40324301	Eraser_BKT(KCM)_Assy	3	9	18	36	
10	40167901	Shaft_Link	3	9	18	36	
11	40132301	Lever_Link(R)	4	12	24	48	
12	40132401	Lever_Link(L)	4	12	24	48	
13	RE6-SUS	E Ring	16	48	96	192	
14	40168401	Spring_Support(R)	4	12	24	48	
15	40188501	Spring_Support(L)	4	12	24	48	
16	40136201	Bracket_Sensor_Toner(KCM)	3	9	18	36	
17	4PP3522-3568P001	Bearing	4	12	24	48	
18	40173301	AMP14P-AMP3X4	1	3	6	12	
19	40449501	Sensor_Assy_T(KCM)	3	9	18	36	
20	40172701	Cordwire_AMP8P_AMP2PX4	1	3	6	12	
21	40664301	Shaft (k) Assy	1	3	6	12	

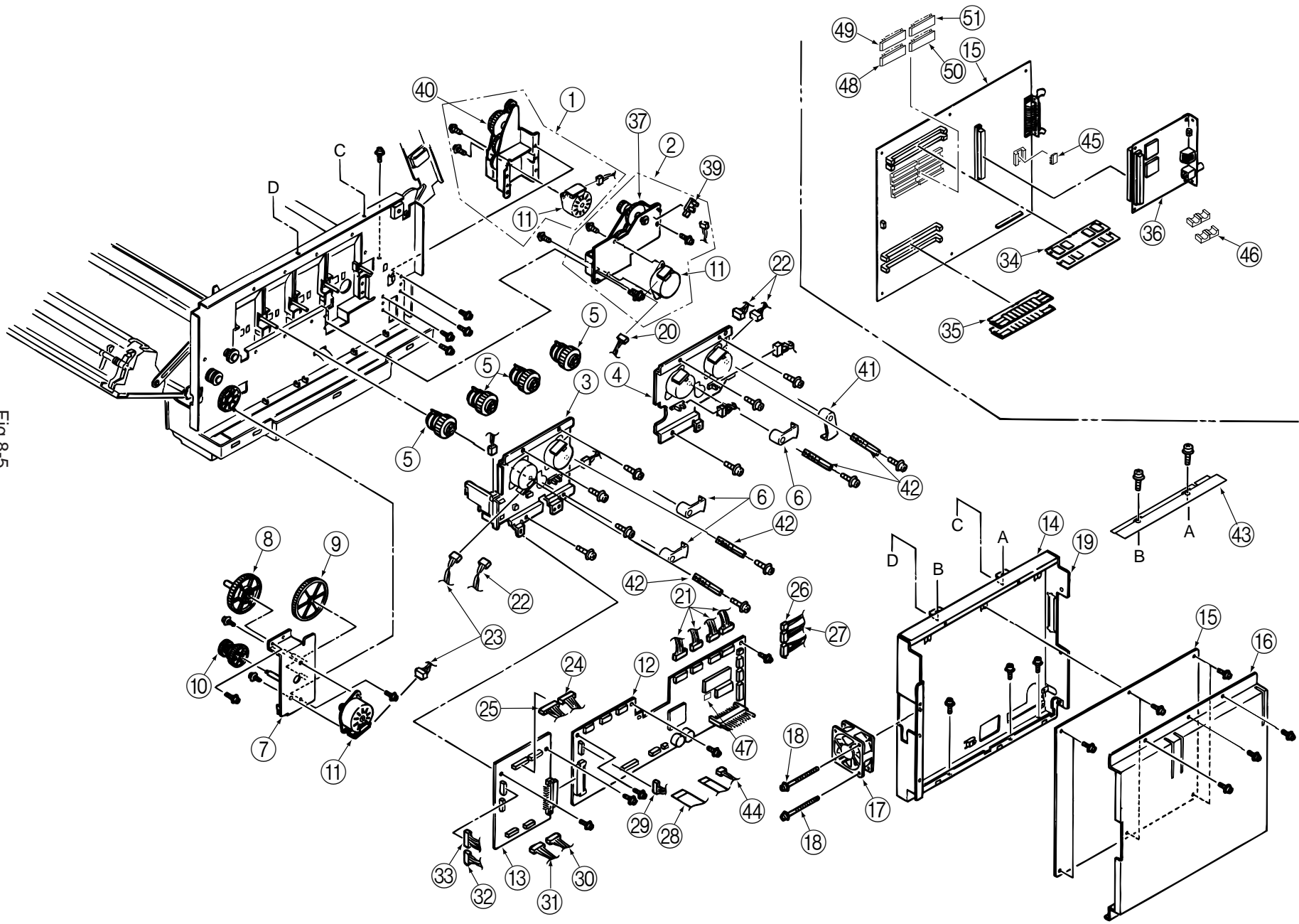


Fig:8-5

Table.8-5

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40310001	Gear_Heat_Assy	1	3	6	12	
2	40392301	Motor_Assy_Belt	1	3	6	12	
3	40309101	Main_Motor(A)_Assy	1	3	6	12	
4	40309201	Main_Motor(B)_Assy	1	3	6	12	
5	40208101	Gear_Oneway(Z30)	4	12	24	48	
6	40664401	Lever_Up/ Dn2(YMC)	3	9	18	36	
7	40175001	Bracket_Hopping_Motor	1	3	6	12	
8	40143401	Gear_Idle(92)	1	3	6	12	
9	40143501	Gear_Feed(118/ 17)	1	3	6	12	
10	40164401	Gear_Oneway(Z48/ 74)	1	3	6	12	
11	40124101	Motor_Pulse(ID)	3	9	18	36	
12	40634102	Board-PX4	1	3	6	12	EEPROM is excluded
13	40437201	Board-PXF	1	3	6	12	
14	40233901	Cover_CU	1	3	6	12	
15	40604802	Board-PCR	1	3	6	12	
16	40376901	Plate_Sealed	1	3	6	12	
17	40197101	Motor_Fan	1	3	6	12	
18	PSW2W3-25C	Screw(SW+2W)	2	6	12	24	
19	40377001	Board_IF	1	3	6	12	
20	40171002	AMP8P-AMP4PX2	1	3	6	12	
21	40456101	JST12 AMP15 AMP10 AMP9 connection cord	1	3	6	12	Cable Assy
22	40173001	AMP12P-AMP3PX2	1	3	6	12	
23	40171001	AMP8P-AMP4PX2	1	3	6	12	
24	40447101	AMP12P-AMP3PX4	1	3	6	12	
25	(40173301)	(AMP14P-AMP3PX4)	(1)	(3)	(6)	(12)	Designated in Fig.8-4
26	(40171801)	(AMP7P-AMP7P)	(1)	(3)	(6)	(12)	Designated in Fig.8-3
27	40172401	AMP6P-AMP4P	1	3	6	12	
28	2381005P0003	HCUJ (1.25)-16F-300	1	3	6	12	
29	40172801	AMP12P-AMP4, 3X2	1	3	6	12	
30	(40447301)	(JST6P-AMP3PX2)	(1)	(3)	(6)	(12)	Designated in Fig.8-3
31	(40177701)	(AMP7P-AMP7P)	(1)	(3)	(6)	(12)	Designated in Fig.8-7
32	40447001	JST8P-JST8P	1	3	6	12	
33	(40172701)	(AMP8P-AMP2PX4)	(1)	(3)	(6)	(12)	Designated in Fig.8-4
34	40493204	PS-SIMM	1	3	6	12	
35	8020003M6601	DRAM-SIMM	1	3	6	12	ODA Only
	-	DRAM-SIMM	(1)	(3)	(6)	(12)	Optional, commercial purchase parts
36	-	NETWORK-CARD	(1)	(3)	(6)	(12)	Optional, commercial purchase parts

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
37	40450001	Belt_Motor_Mech_Assy	1	3	6	12	
38	-	-	-	-	-	-	
39	40135301	Photo_Interrupter	1	3	6	12	
40	40448901	Gear_Heat_Mech_Assy	1	3	6	12	
41	40664501	Lever_Up/ Dn2(K)	1	3	6	12	
42	40583901	Plate_Earth(LKR)	4	12	24	48	
43	40704901	Plate_Shield(CU)	1	3	6	12	
44	40447201	CONN_Cord_Wire	(1)	(3)	(6)	(12)	Designated in Fig.8-3
45	8160339M0000	E2ROM1	1	3	6	12	
46	105A1062C0001	Ferrite Core	2	6	12	24	(Accessory OEL/ODA23W)
47	816A2323M0000	NM93C66N-NW	1	3	6	12	
48	8174626M0001	MSM531602E-M6RS	1	3	6	12	
49	8174626M0002	MSM531602E-M7RS	1	3	6	12	
50	8174626M0003	MSM531602E-M8RS	1	3	6	12	
51	8174626M0004	MSM531602E-M9RS	1	3	6	12	

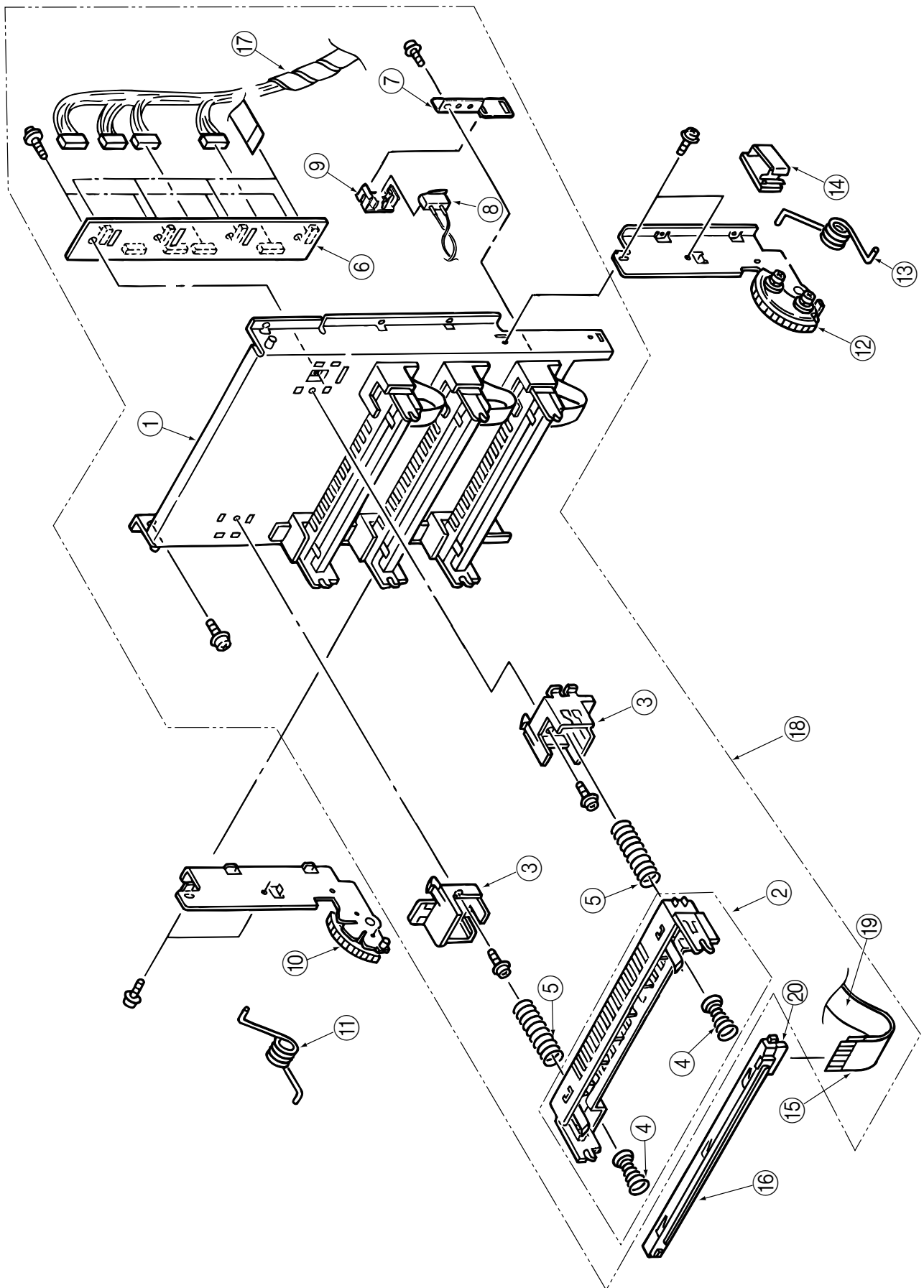


Fig.8-6

Table.8-6

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40187901	Frame_Upper	1	3	6	12	
2	40449101	Holder_LED_Assy	4	12	24	48	
3	40187801	Guide_Holder	8	6	12	24	
4	40829701	Spring_Head	8	6	12	24	
5	40197705	Spring_EP	8	6	12	24	
6	40536001	Board_PD6	1	3	6	12	
7	40394201	Plate_Oil_Sensor	1	3	6	12	
8	40171702	AMP2P_MSW	1	3	6	12	
9	40408601	Holder_SW	1	3	6	12	
10	40449301	Plate_Support_(L)Assy	1	3	6	12	
11	40197401	Torsion_Spring(A)	1	3	6	12	
12	40449201	Plate_Support_(R)Assy	1	3	6	12	
13	40218301	Torsion_Spring(B)	1	3	6	12	
14	LP-6665-1	Flat_Cable_Clip	1	3	6	12	
15	2381005P0001	HCUJ(1.25)-14F-140-10S6(B)-MI92896)	4	12	24	48	
16	40547301	LED_Head_Unit-51M	4	12	24	48	
17	(40456101)	JST12 AMP15 AMP10 AMP9 connection cord	(1)	(3)	(6)	(12)	Designated in Fig.8-5
18	40410701	Frame_Upper_Assy	1	3	6	12	
19	2381005P0006	HCUJ(1.25)-12F-160	4	12	24	48	
20	224A1287P0260	PXW26-1250B	4	12	24	48	

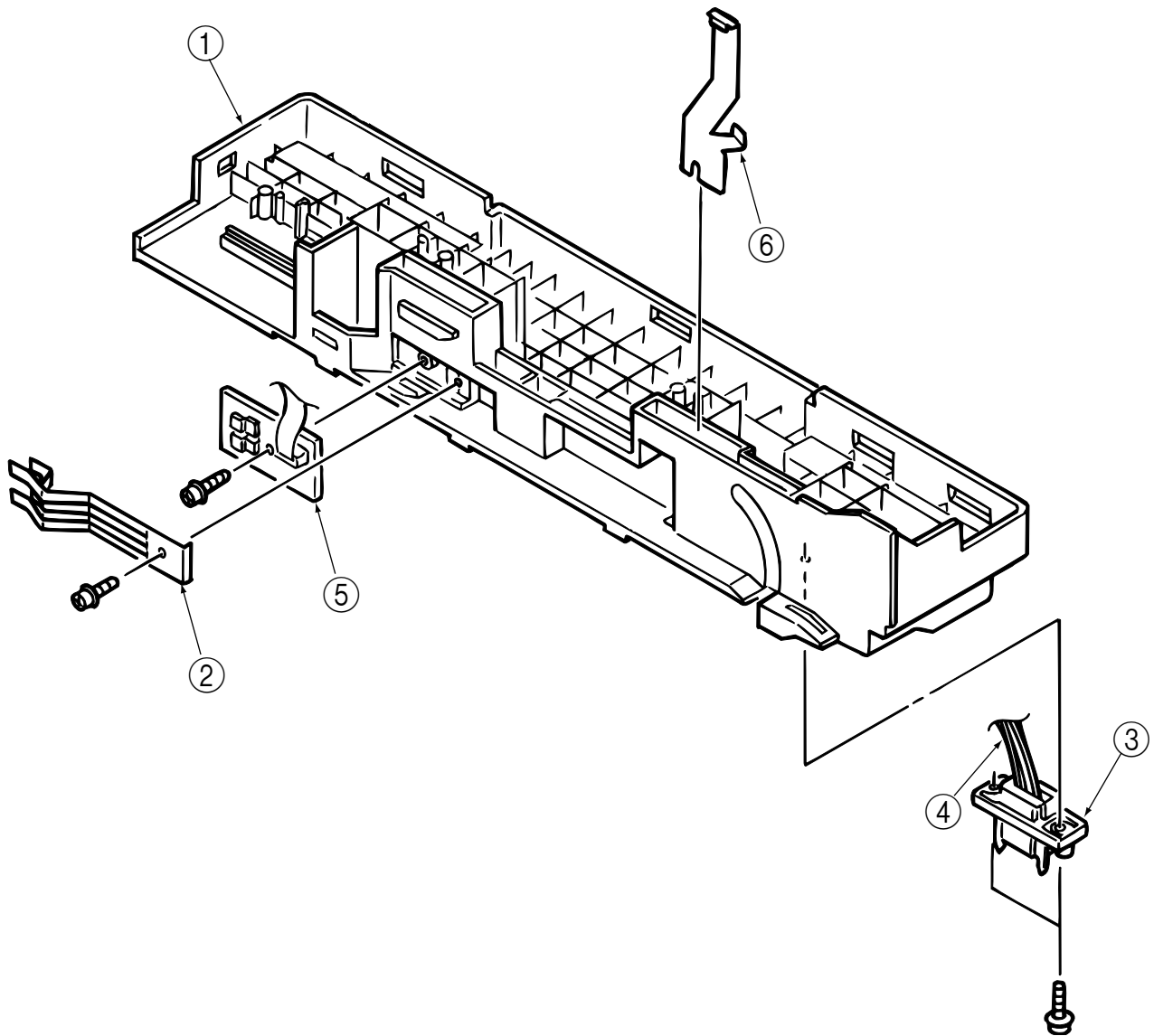


Fig.8-7

Table.8-7

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40449801	Guide_Cassette(R)Sub_Assy	1	3	6	12	
2	4PP4076-5360P001	Spring_Detector	1	3	6	12	
3	220A1866P0140	Square_shaped_connector	1	3	6	12	
4	40177701	Connector_Cord	1	3	6	12	
5	40368301	Board-PXC	1	3	6	12	
6	4PP4076-5742P001	Plate_Earth (link)	1	3	6	12	

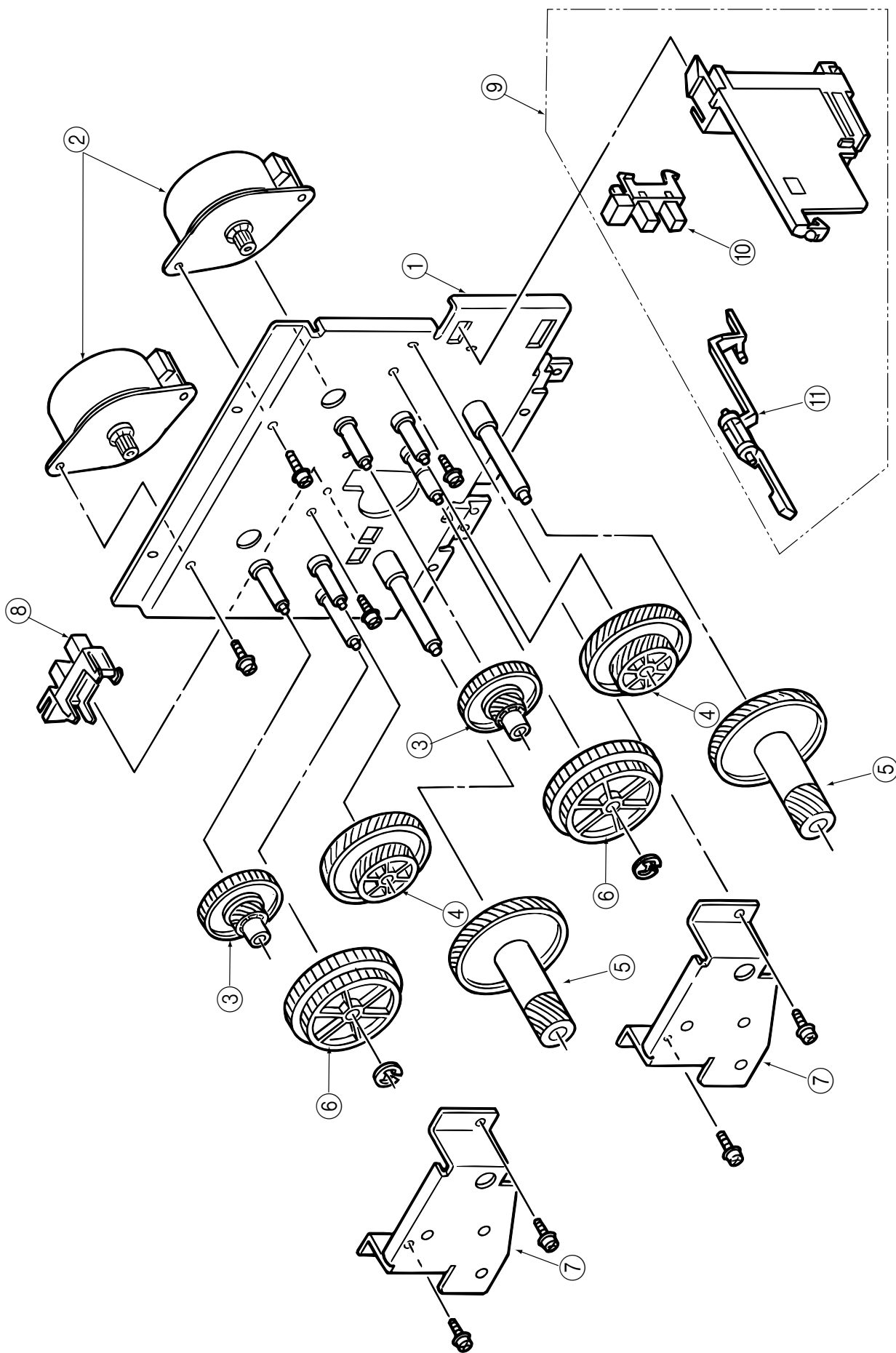


Fig.8-8

Table.8-8

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40165301	Frame_Motor(ID1)	1	3	6	12	
2	40124101	Motor_Pulse(ID)	2	6	12	24	
3	40129901	Gear_(25/75)	2	6	12	24	
4	40130701	Gear_Helical(67/43/24)	2	6	12	24	
5	40130601	Gear_Helical(67/18)	2	6	12	24	
6	40130201	Gear_Z53/44	2	6	12	24	
7	40129501	Bracket_Support(ID)	2	6	12	24	
8	40135301	Photo_Interrupter	1	3	6	12	
9	40308601	Toner_Sensor(Y)_Assy	1	3	6	12	
10	40135301	Photo_Interrupter	1	3	6	12	
11	40449601	Sensor_Assy_T(Y)	1	3	6	12	

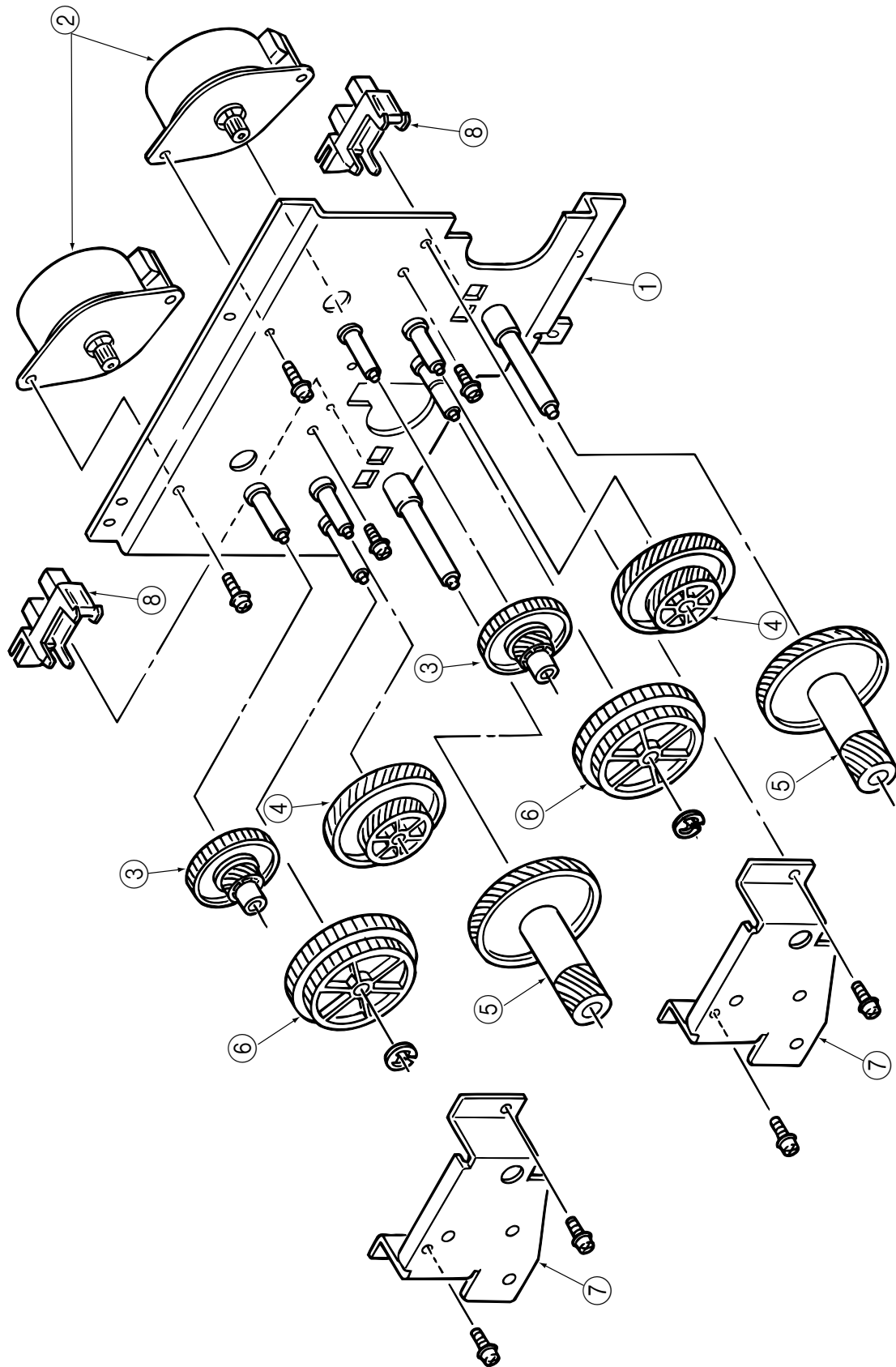


Fig.8-9

Table.8-9

No.	Parts No.	Name	Q'ty/U	Reccomended Q'ty			Remarks
				500	1000	2000	
1	40129401	Frame_Motor(ID)	1	3	6	12	
2	40124101	Motor_Pulse(ID)	2	6	12	24	
3	40129901	Gear_(25/75)	2	6	12	24	
4	40130701	Gear_Helical(67/43/24)	2	6	12	24	
5	40130601	Gear_Helical(67/18)	2	6	12	24	
6	40130201	Gear_Z53/44	2	6	12	24	
7	40129501	Bracket_Support(ID)	2	6	12	24	
8	40135301	Photo_Interrupter	2	6	12	24	

Appendix A CENTRONICS PARALLEL INTERFACE

1) Connector

- Printer side : 36-pin receptacle (Female)
 Type 57RE-40360-830B-D29 (made by Daiichi Denshi) or equivalent
- Cable side : 36-pin plug (Male)
 Type 57-30360 (made by Daiichi Denshi) or equivalent
 Plug-552274-1 (AMP), 552073-1 (AMP) or equivalent

2) Cable

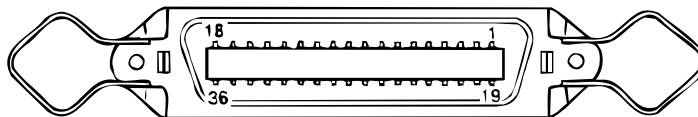
- Cable length : 6 ft (1.8 m) max.
 (A Shielded cable composed of twisted pair wires is recommended for noise prevention.)

Note: Cable is not supplied.

3) Table of parallel I/F signals

Pin No.	Signal name	Signal direction	Functions
1	DATA STROBE	→ PR	Parallel data sampling strobe
2	DATA BIT - 1	→ PR	Parallel input data
3	DATA BIT - 2		
4	DATA BIT - 3		
5	DATA BIT - 4		
6	DATA BIT - 5		
7	DATA BIT - 6		
8	DATA BIT - 7		
9	DATA BIT - 8		
10	ACKNOWLEDGE	← PR	Completion of data input or end of functioning
11	BUSY	← PR	During print processing or during alarm
12	PAPER END	← PR	End of paper
13	SELECT	← PR	Select state (ON-LINE)
14	Auto Feed	→ PR	Request to change Mode
15	-		(Not used)
16	0V		Signal ground
17	CHASSIS GROUND		Chassis ground
18	+5V	← PR	50 mA max.
19	0V Signal ground		Signal ground
20			
30			
31	INPUT PRIME	→ PR	Initializing signal
32	FAULT	← PR	End of paper or during alarm
33	0V		Signal ground
34	-		(Not used)
35	-		High level (3.3 kΩ)
36	Select In	→ PR	Request to change Mode

- Connector pin arrangement



4) Signal level

- LOW : 0 V to +0.8 V
- HIGH : +2.4 V to +5.0 V

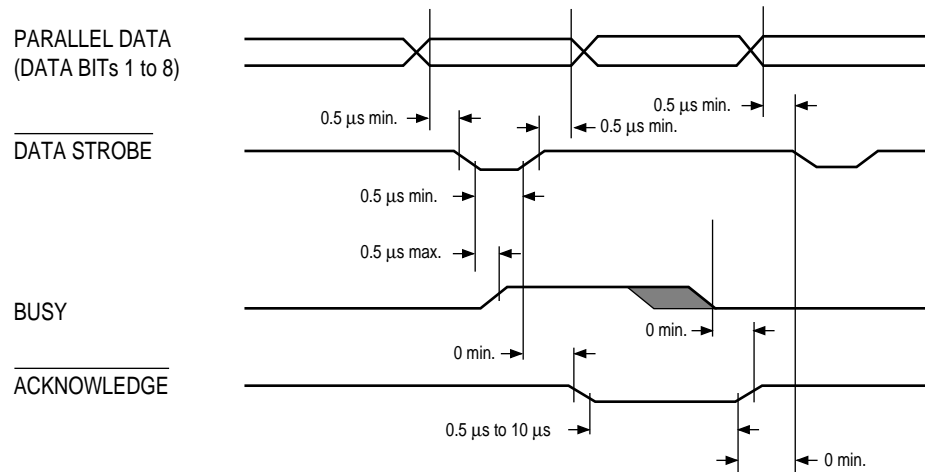
5) Specifications

Item	Description
Mode	Compatibility mode, Nibble mode, ECP mode
Data bit length	8 bits: Compatibility mode, 4 bits: Nibble mode, 9 bits: ECP mode
Input prime	Valid/Invalid
Receive buffer	8K, 20K, 50K, 100K, 1M Bytes
Control	Handshaking control is performed in each mode. Data received from the host is stored in the receive buffer. Busy control is performed. Signal lead control is performed.

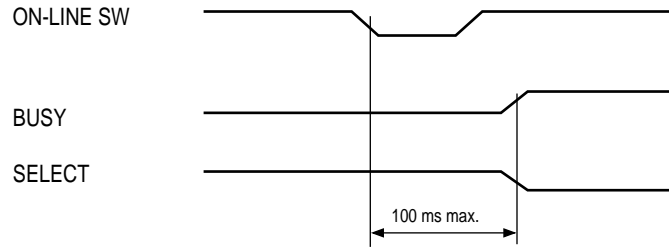
6) Timing charts

• Compatible mode

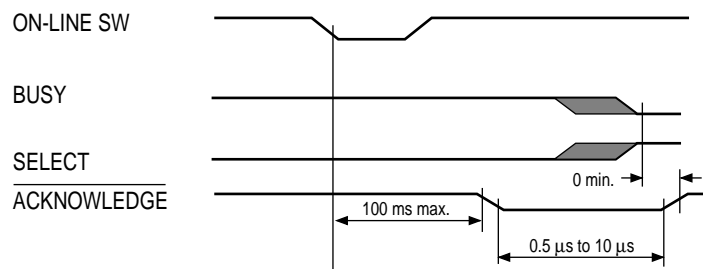
a) Data receiving timing



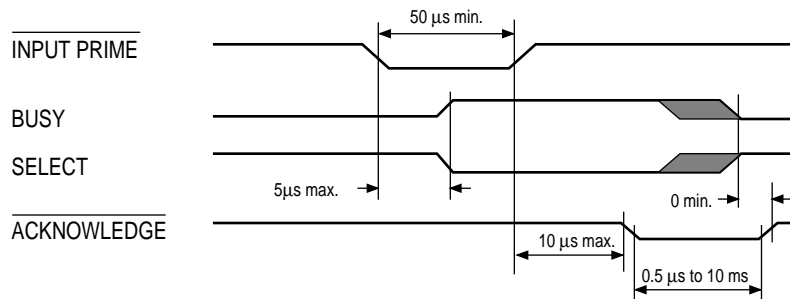
b) On-line off-line switching timing by ON-LINE SW



c) Off-line on-line switching by ON-LINE SW



d) Init timing (when set to the effective INPUT PRIME signal)



- Nibble mode
Conforms to IEEE1284 spec.
- ECP mode
Conforms to IEEE1284 spec.

Appendix B HIGH CAPACITY SECOND PAPER FEEDER

1. OUTLINE

1.1 Functions

The printer is mounted on top of this High Capacity Second Paper Feeder, and it supplies paper automatically through the operation of hopping motor, which is driven by signals sent from the printer.

The main functions are the followings:

- Paper that can be used:

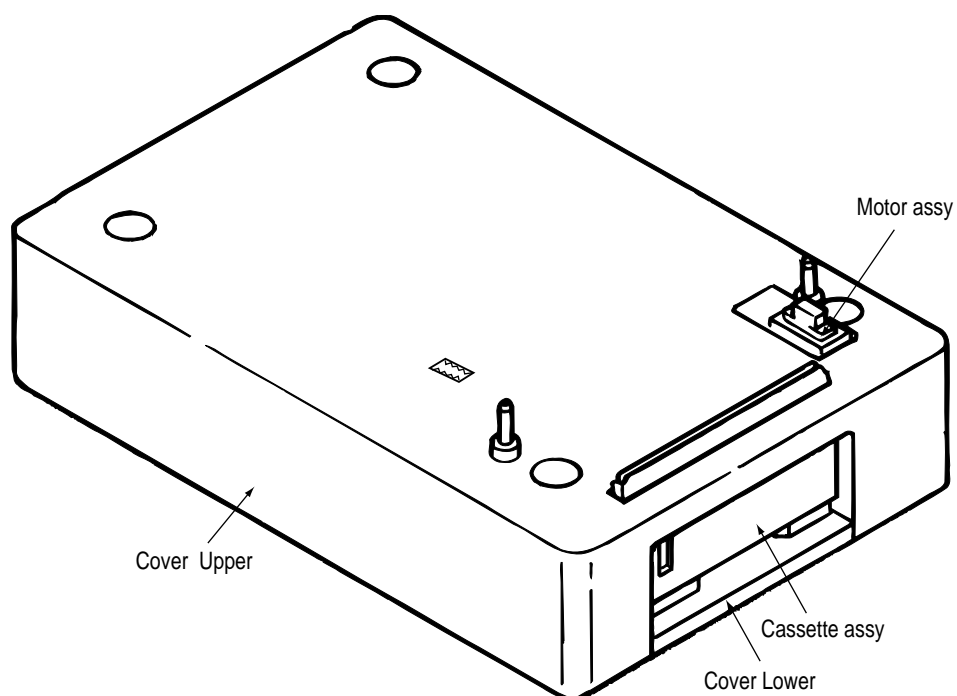
[Paper Type]

- Cut Sheet Size: A4, A5, B5, Letter, Executive, Legal13, Legal14
- Special Size: Paper Width: 148 to 216mm
Paper length: 210 to 356mm

[Weight]

- 64 ~ 81 g/m²
- Paper setting quantity: 500 sheets of paper weighing 64 g/m²

1.2 External View and Component Names

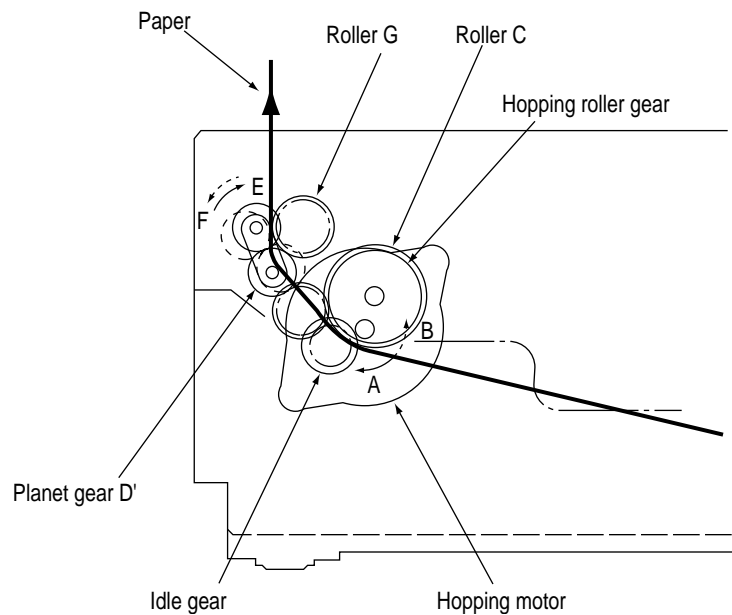


2. MECHANISM DESCRIPTION

2.1 General Mechanisms

The sheet at the very top of the stack in the paper cassette is fed into the printer, one sheet at a time, when the High Capacity Second Paper Feeder receives the signal from the printer.

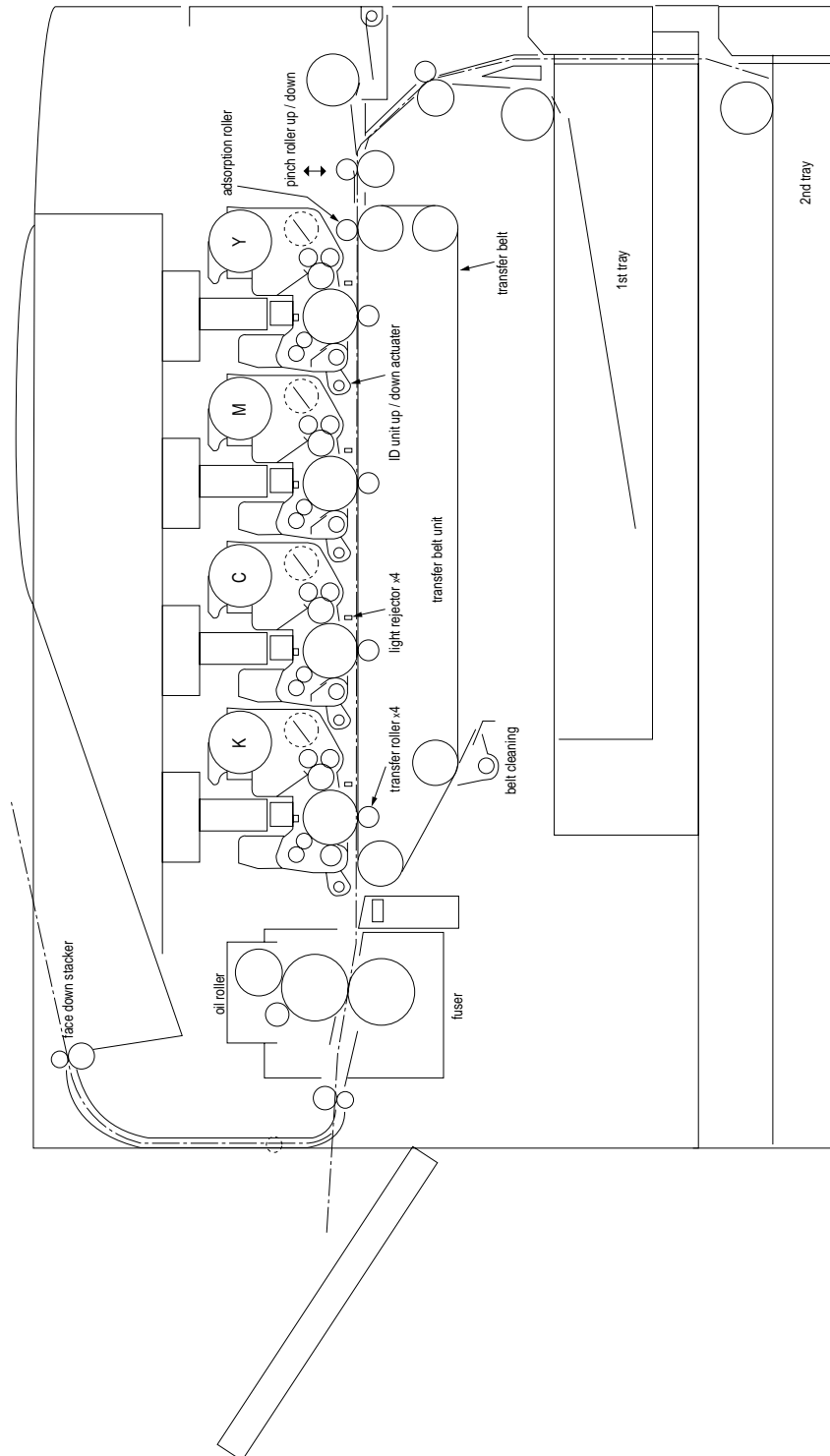
- (1) First, the hopping motor rotates in the direction of arrow A. The hopping gear is turned, via idle gear, and the roller C on the same shaft is also turned. At the same time, the planet gear D' moves in the direction of the arrow E, roller G turns; the paper is fed for a predesignated distance until its leading edge reaches roller G.
- (2) Next, the hopping motor rotates in the direction of arrow B. While the hopping gear also turns at the same time, due to the one-way bearing being engaged at the hopping gear, the roller C does not turn. The planet gear D' moves in the direction of the arrow F, drives the Roller G and feeds the paper into the printer, until it reaches the registration roller of the printer.



Once the delivered into the printer, the paper is then controlled and fed through by registration motor of the printer.

2.2 Hopper Mechanism

The hopper automatically feeds the printer with the paper being set, single sheet at a time. When the paper is loaded in the paper cassette, it is then transported by the hopping motor, carrying forward only a single sheet caught by hopping roller at a time.



3. PARTS REPLACEMENT

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.


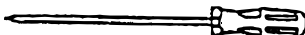







3.1 Precautions Concerning Parts Replacement

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the High Capacity Second Paper Feeder from the printer.
- (2) Do not disassemble the Second Paper Feeder if it is operating normally.
- (3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.
- (4) Only specified service tools may be used.
- (5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.
- (6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.
- (7) When handling printed circuit boards, do not use any glove which may generate static electricity.
- (8) Do not place the printed circuit boards directly on the equipment or floor.

[Service Tools]

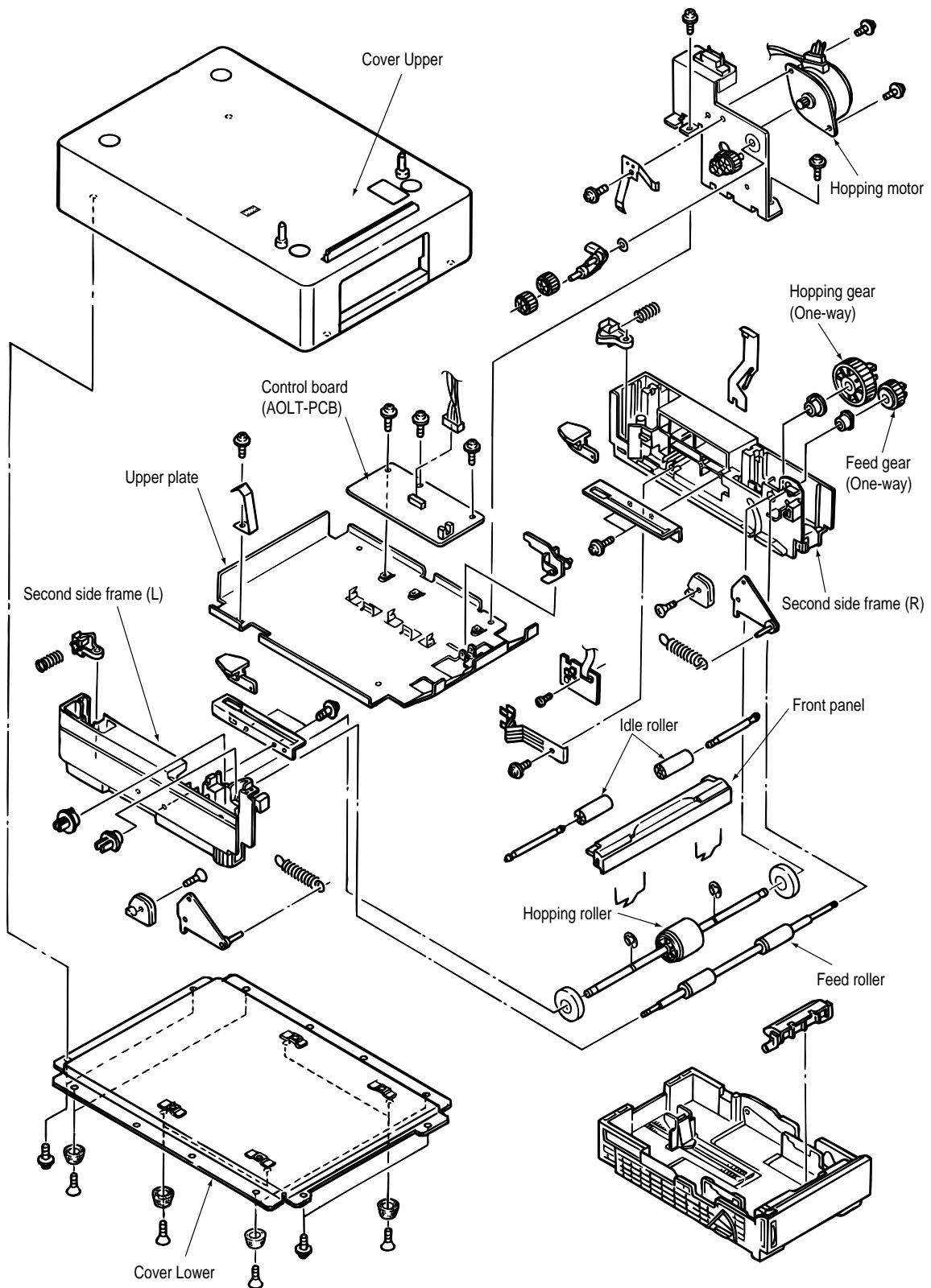
Table 3-1 shows the tools required for the replacement of printed circuit boards and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Place of use	Remarks
1	 No. 1-100 Philips screwdriver	1	2~2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3~5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 No. 5-200 screwdriver	1		
5	 Digital multimeter	1		
6	 Pliers	1		
7	 Handy cleaner	1		
8	 Connector remover	1	OKI P/N: 4PP4076-5395P1	
	 Tweezers	1		

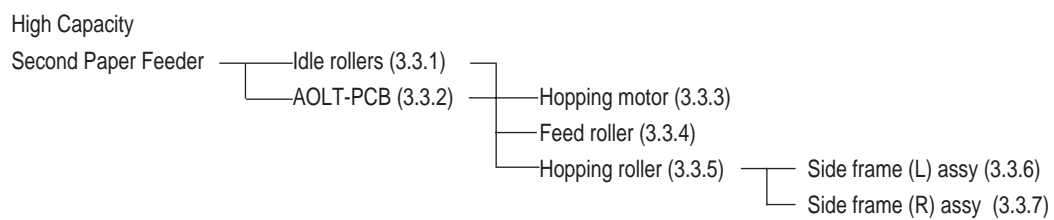
3.2 Parts Layout

This section describes the layout of the main components.



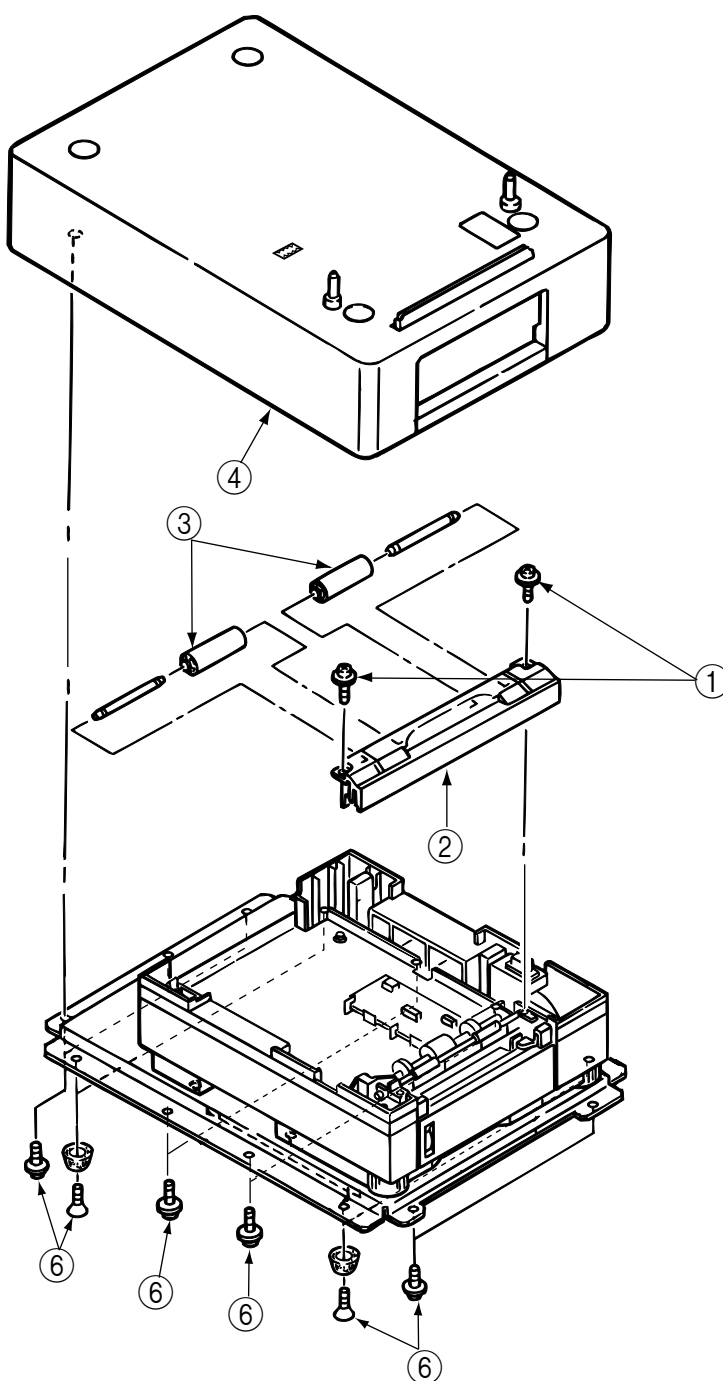
3.3 Parts Replacement Methods

This section describes the parts replacement methods for the components listed in the disassembly order diagram below.



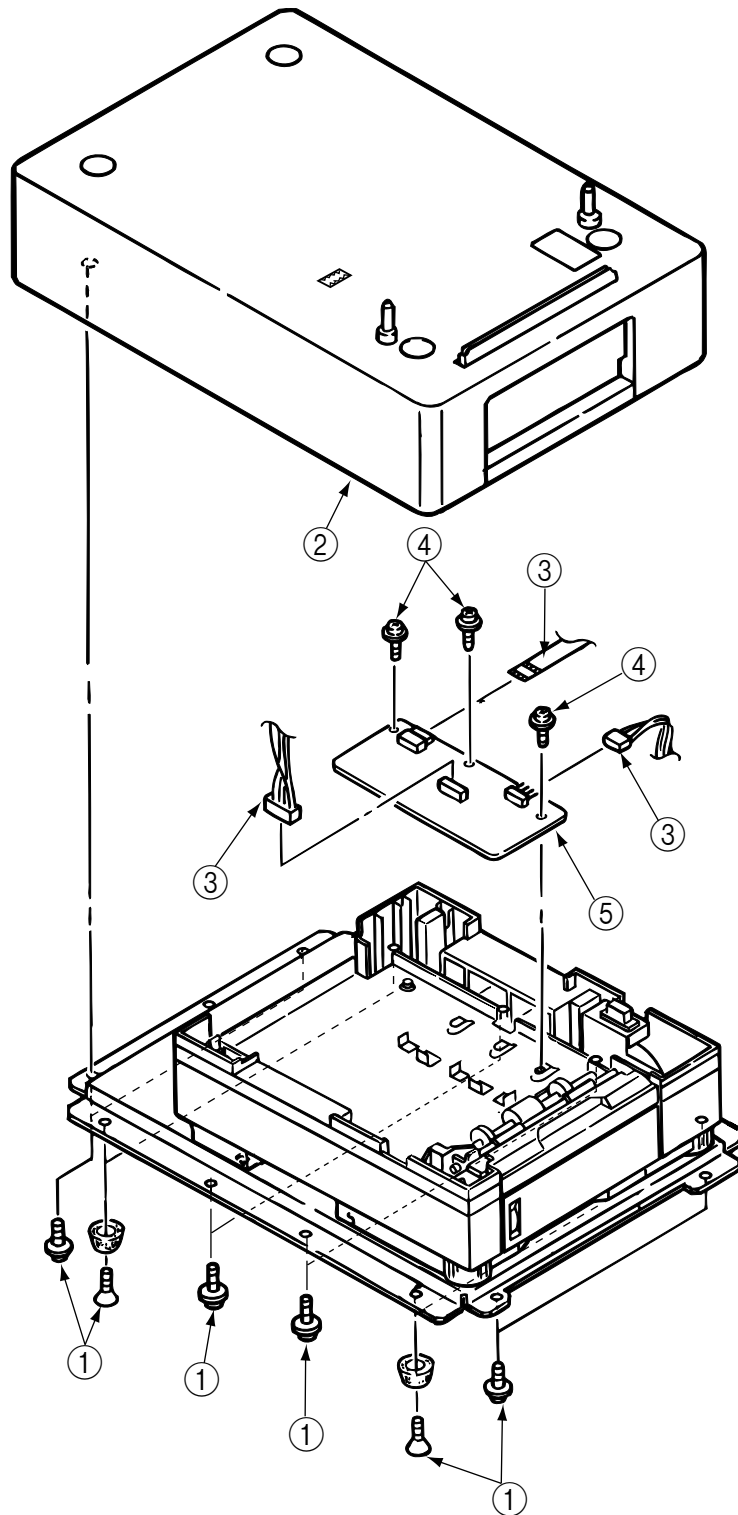
3.3.1 Idle rollers

- (1) Remove 13 screws ⑥ and remove the Cover Upper ④, sliding it.
- (2) Remove two screws ① and remove the front panel assy ②.
- (3) Remove two idle rollers ③.



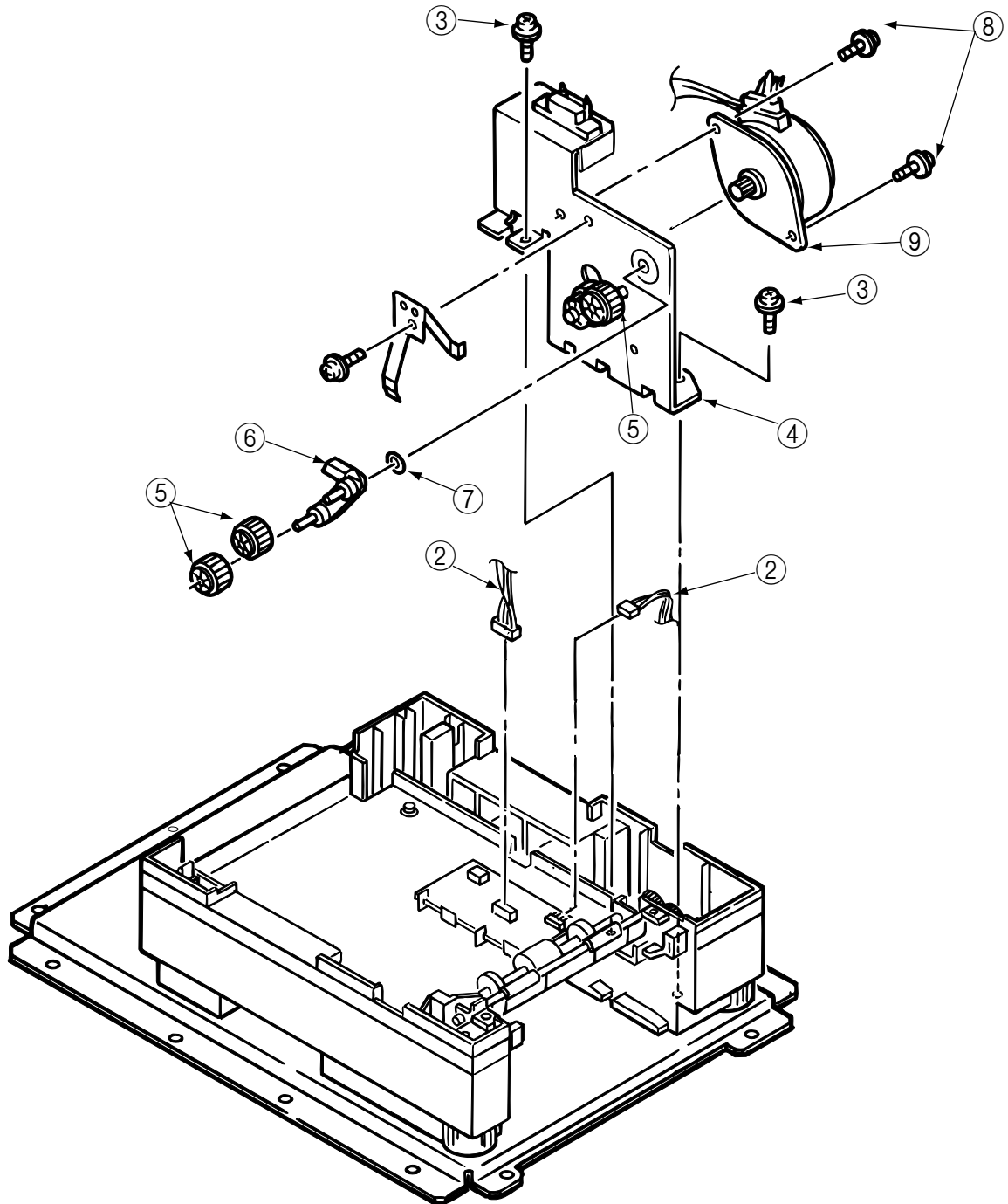
3.3.2 AOLT-PCB

- (1) Remove 13 screw ① and remove the Cover Upper ②, sliding it.
- (2) Remove three connectors ③ and three screws ④.
- (3) Remove the AOLT-PCB ⑤.



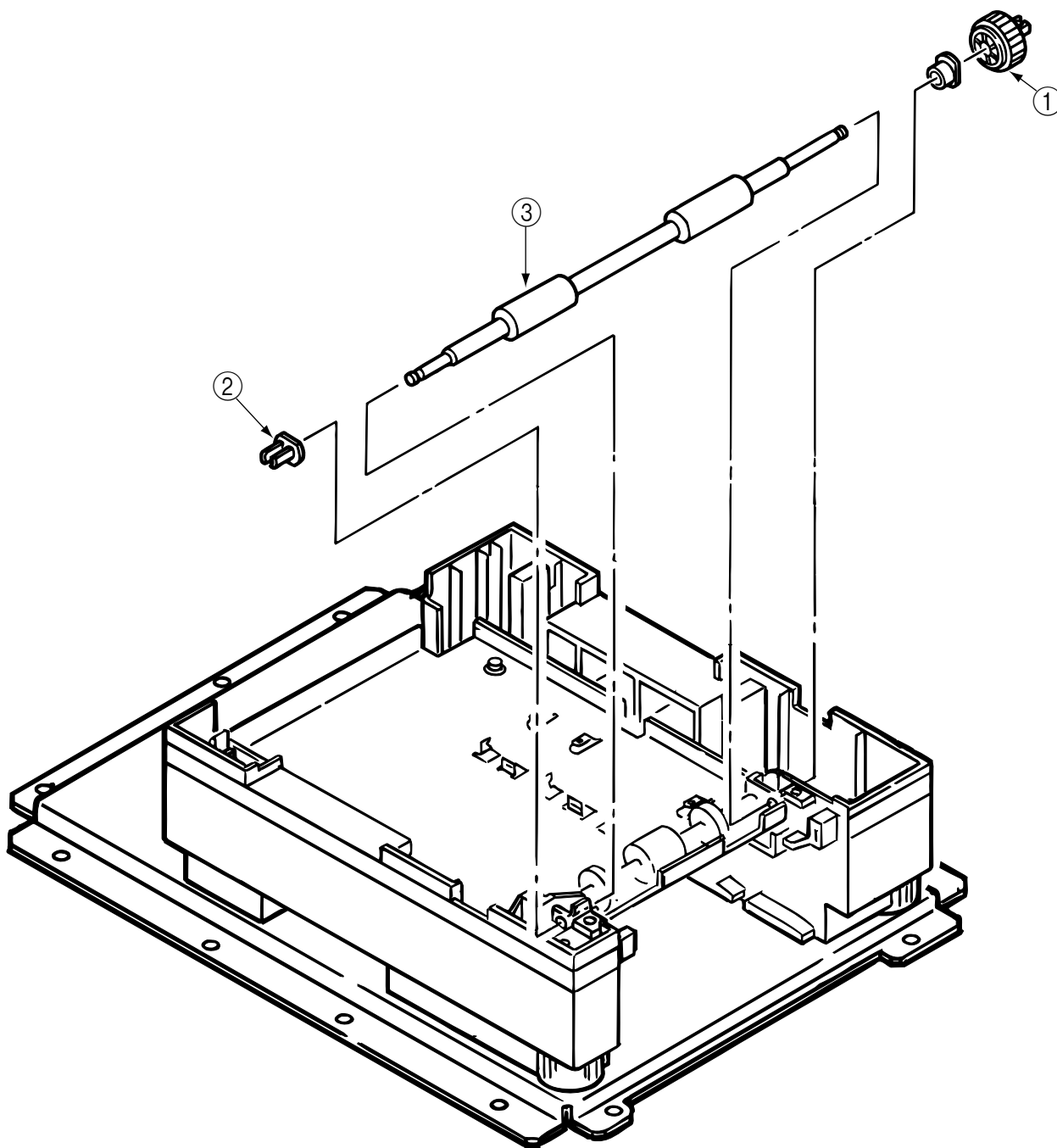
3.3.3 Hopping motor

- (1) Remove the Cover Upper (see 3.3.1 step1).
- (2) Remove the front panel assy (see 3.3.1 step2).
- (3) Remove two connectors ② and two screws ③, then remove the hopping motor assy ④. Three gears ⑤ and the connecting lever ⑥, as well as the wave washer ⑦ all come off at the same time, so be careful not to lose them.
- (4) Remove two screws ⑧ and remove the hopping motor ⑨.



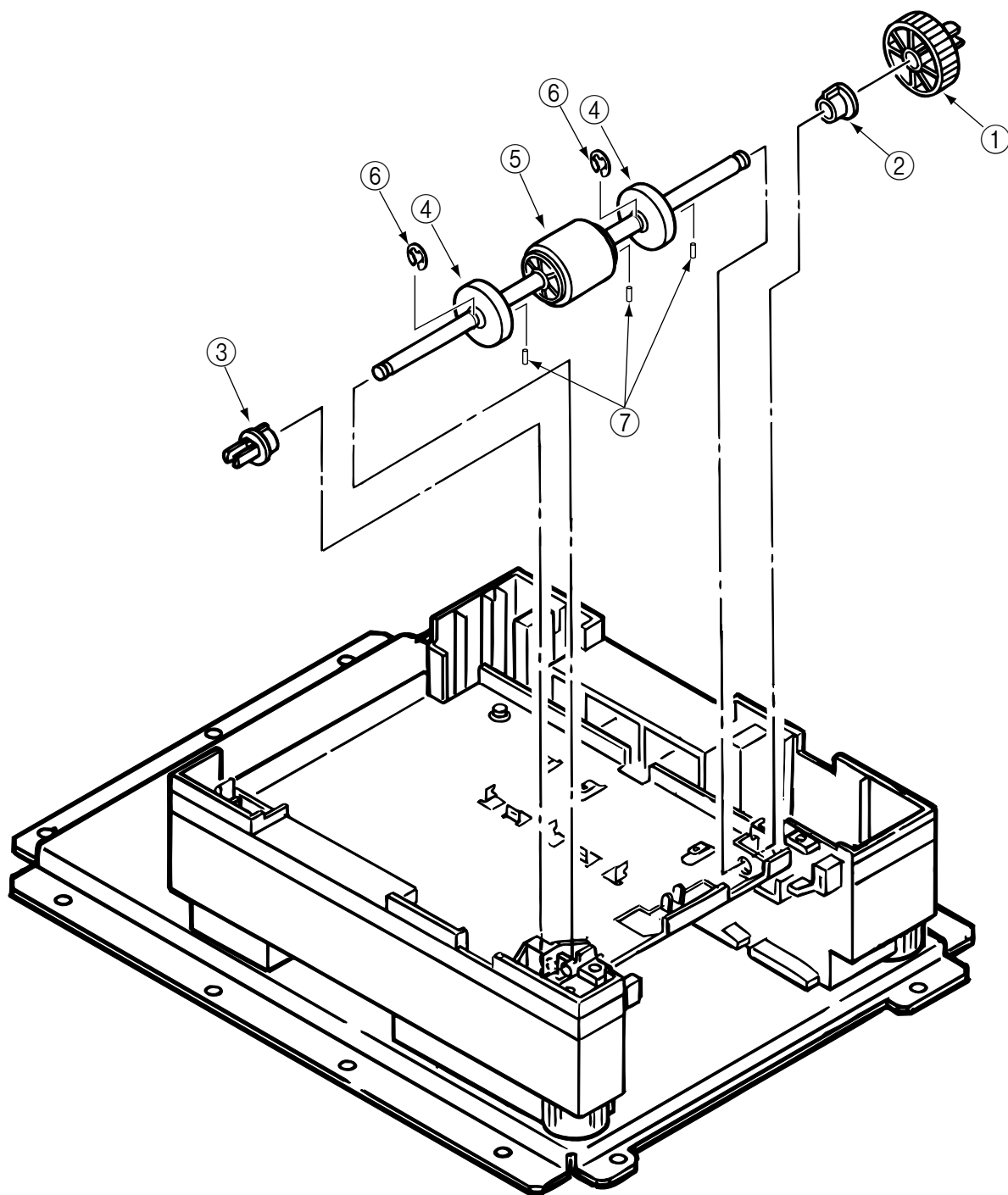
3.3.4 Feed roller

- (1) Remove the Cover Upper (see 3.3.1 step1).
- (2) Remove the front panel assy (see 3.3.1 step2).
- (3) Remove the AOLT-PCB (see 3.3.2).
- (4) Remove the hopping motor assy (see 3.3.3).
- (5) Remove the latch on the feed roller gear ① and remove the feed roller gear ①.
- (6) Remove the latch on the feed roller bearing ② and remove the feed roller bearing ②.
- (7) Shift the feed roller ③ to the right side and lift it out, holding it on the left side.



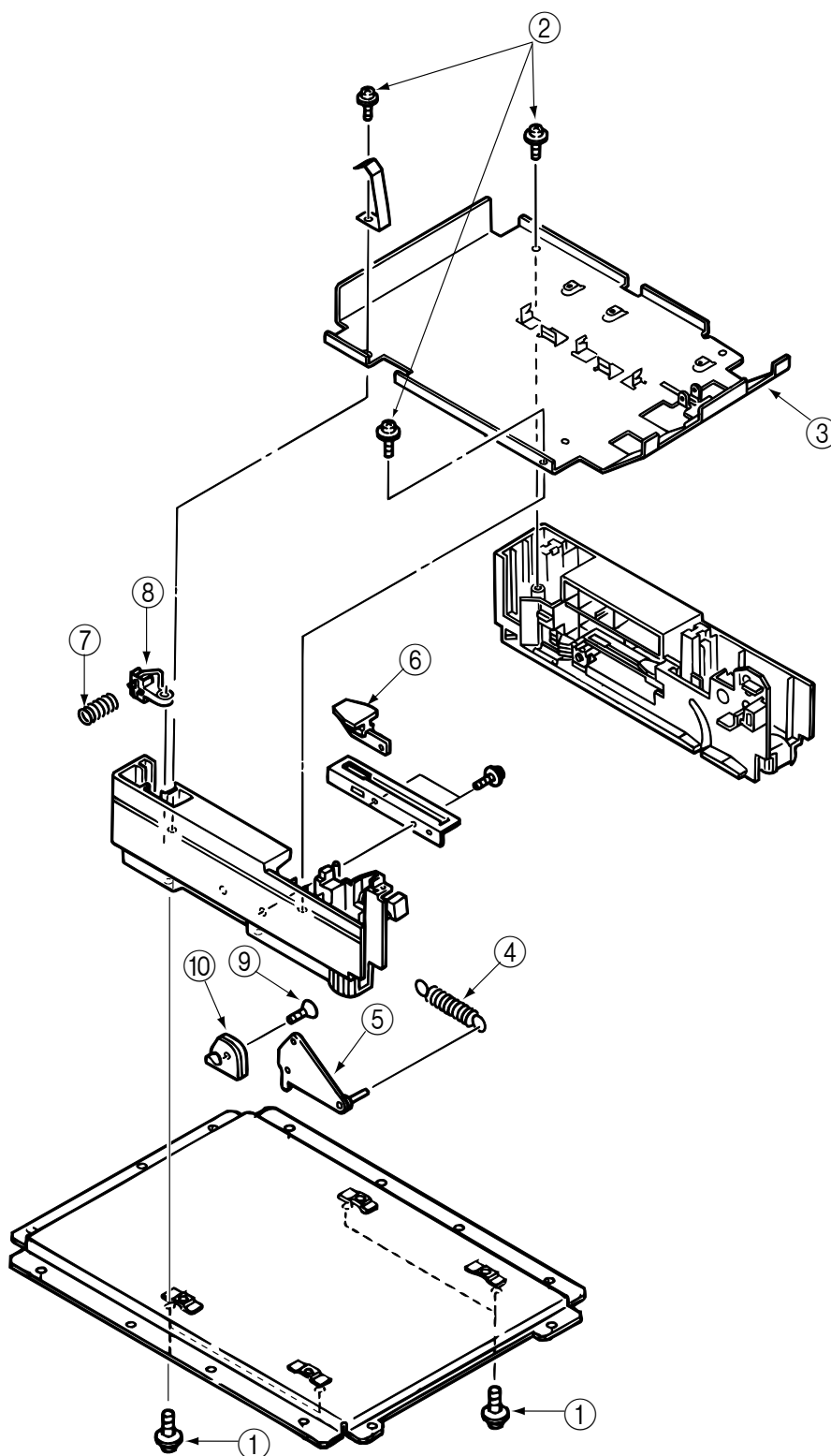
3.3.5 Hopping roller

- (1) Remove the feed roller (see 3.3.4).
- (2) Remove two-E rings (6) and three knock pins (7).
(Be careful no to lose knock pins (7).)
- (3) Remove the latch on the hopping roller gear (1) and remove the hopping roller gear (1). The bearing F (2) comes off at the same time, so be careful not to lose it.
- (4) Remove the latch on bearing L (3) and remove the bearing L (3).
- (5) Remove the hopping roller (sub) (4) and remove the hopping roller rubber (5) from it.



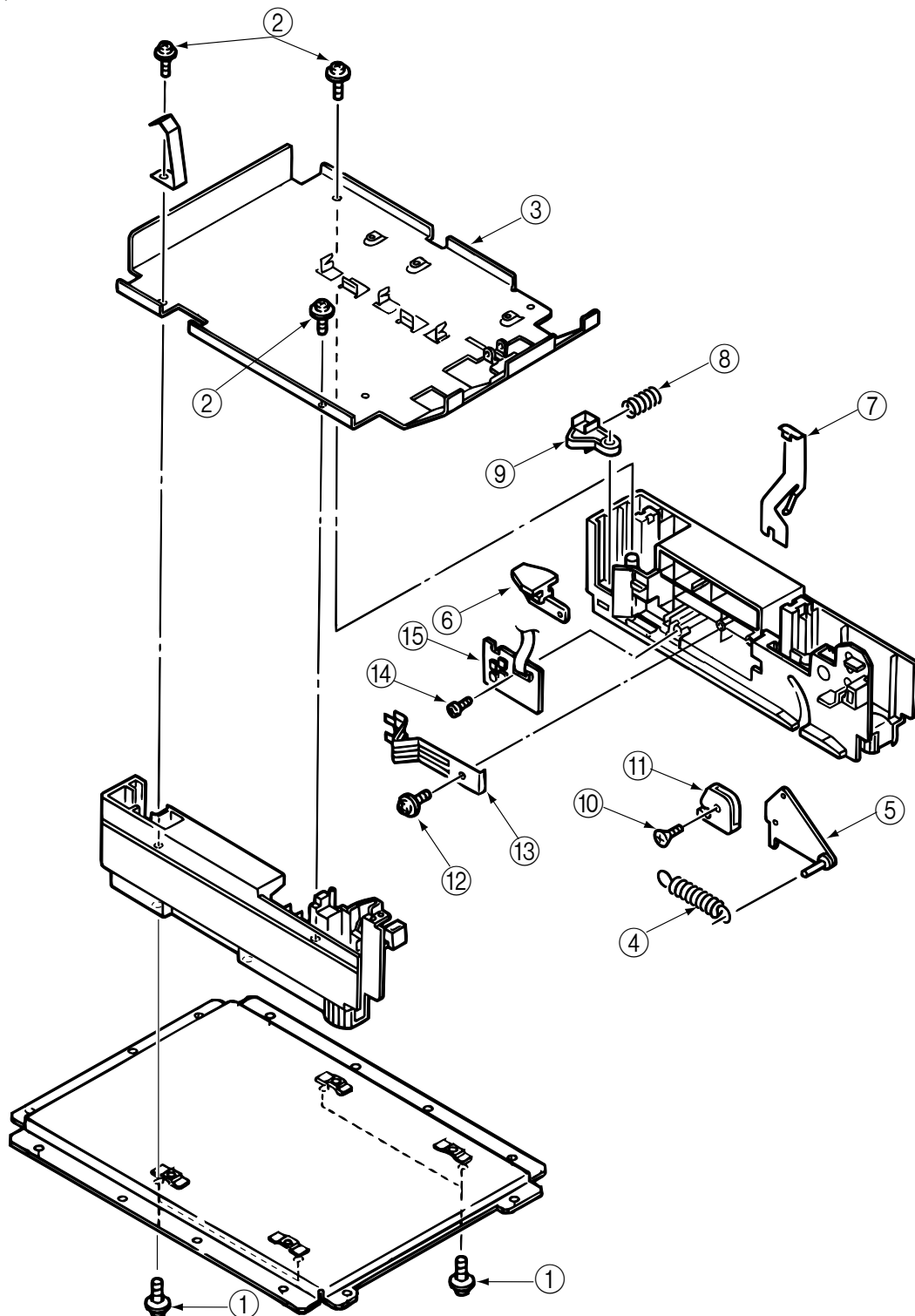
3.3.6 Side frame (L) assy

- (1) Remove the hopping roller (see 3.3.5).
- (2) Remove the four screws ① and remove the Cover Lower.
- (3) Remove three screws ② and remove the upper plate ③.
- (4) Remove the cassette lock spring ④, link ⑤, pull block ⑥ (note the directions of the hooks of the cassette lock spring ④).
- (5) Remove the spring ⑦ and cassette stopper ⑧.
- (6) Remove the screw ⑨ and remove the link support ⑩.



3.3.7 Side frame (R) assy

- (1) Remove the hopping roller (see 3.3.5).
- (2) Remove four screws ① and remove the Cover Lower.
- (3) Remove three screws ② and remove the upper plate ③.
- (4) Remove the cassette lock spring ④, link ⑤, pull block ⑥ and earth plate ⑦ (note the directions of the hooks of the cassette lock spring ④).
- (5) Remove the spring ⑧ and remove the cassette stopper ⑨.
- (6) Remove the screw ⑩ and remove the link support ⑪.
- (7) Remove the screw ⑫ and remove the detector spring ⑬.
- (8) Remove the screw ⑭ and remove the AOLD-PCB ⑮.



4. TROUBLESHOOTING

4.1 Precautions Prior to the Troubleshooting

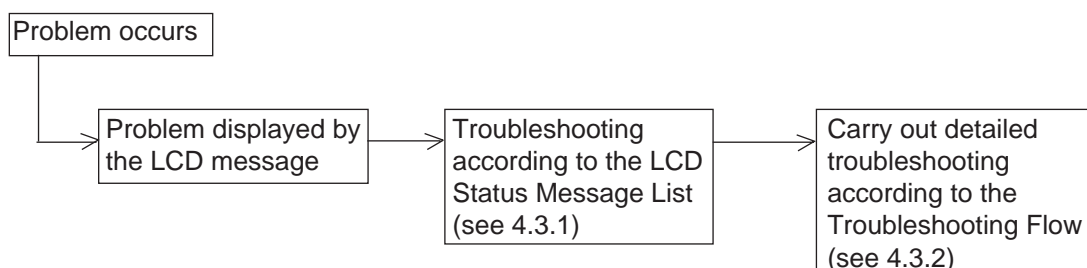
- (1) Go through the basic checking items provided in the Operator Guide.
- (2) Obtain detailed information concerning the problem from the user.
- (3) Go through the checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for the Troubleshooting

- (1) Display on the Operator panel
The status of the problem is displayed on the LCD (Liquid Crystal Display) on the Operator panel. Go through the appropriate troubleshooting procedures according to the messages displayed on the LCD.

4.3 Troubleshooting Method

When a problem occurs, go through the troubleshooting according to the following procedure.



4.3.1 LCD Status Message List

The listing of the statuses and problems displayed in the form of messages on the LCD is provided in Table 4-1.

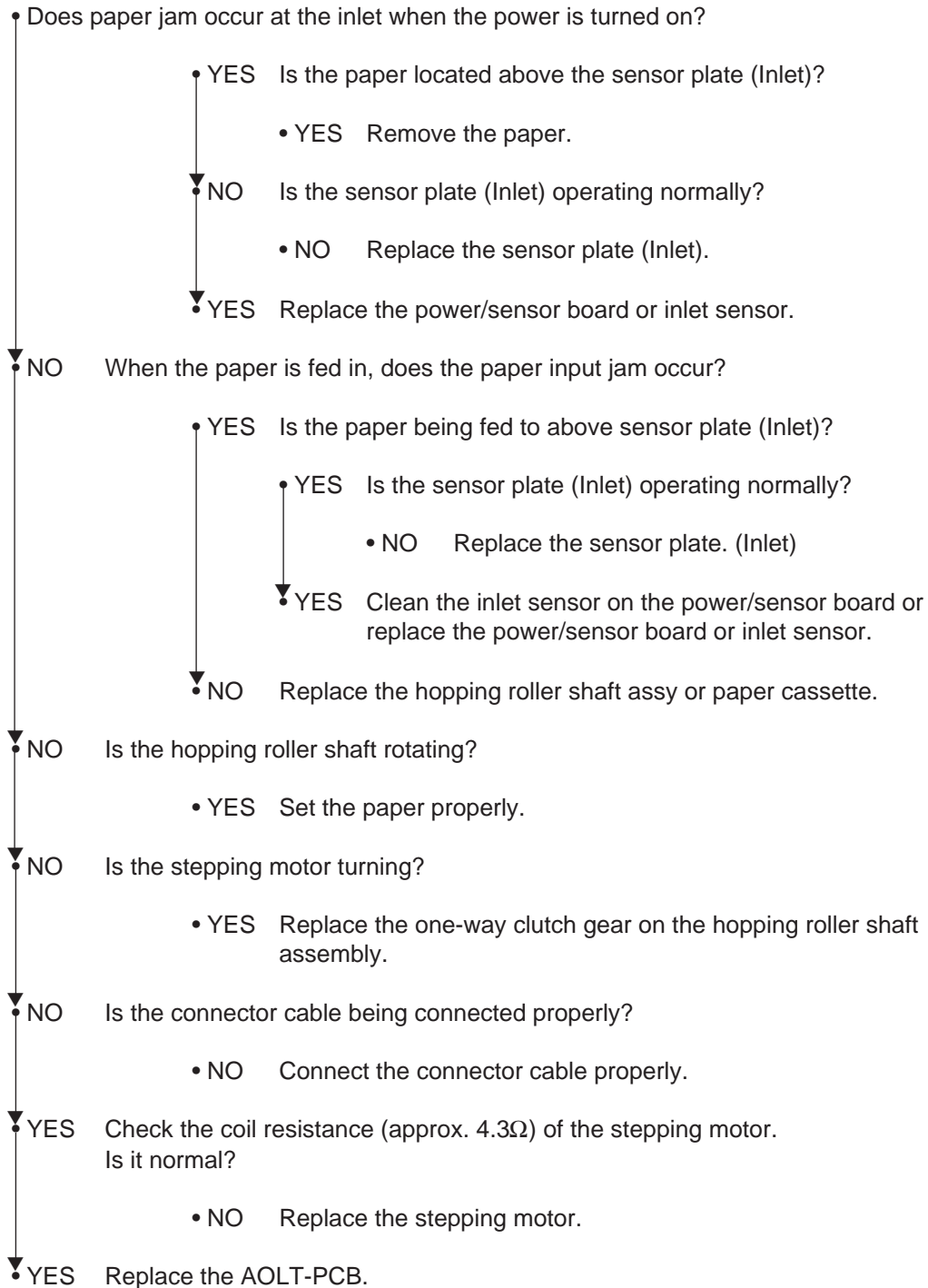
Table 4-1

Classification	LCD Status Message	Description	Recovery method
Jam error	PAPER INPUT JAM CHECK TRAY 2	Notifies of occurrence of jam while the paper is being fed from the High Capacity Second Paper Feeder	<ul style="list-style-type: none">• Check the paper in the High Capacity Second Paper Feeder. Carry out the recovery printing by opening the cover, removing jammed paper and closing the cover, and then turning the error display off.• When the problem occurs frequently, to through the Troubleshooting.
	PAPER FEED JAM CHECK TRAY 2		
Paper size error	ERROR PAPER SIZE CHECK TRAY 2	Notifies of incorrect size paper feeding from the High Capacity Second Paper Feeder.	<ul style="list-style-type: none">• Check the paper in the High Capacity Second Paper Feeder. Also check to see if there was a feeding of multiple sheets. Carry out the recovery printing by opening the cover, removing paper and closing the cover, and then turning the error display off.
Tray paper out	PAPER OUT mmmmmmmm TRAY 2 mmmmmmmm: Paper size in the tray being selected	Notifies of no paper or paper cassette state of the High Capacity Second Paper Feeder.	<ul style="list-style-type: none">• Load the paper or paper cassette in the High Capacity Second Paper Feeder.

4.3.2 Troubleshooting Flow

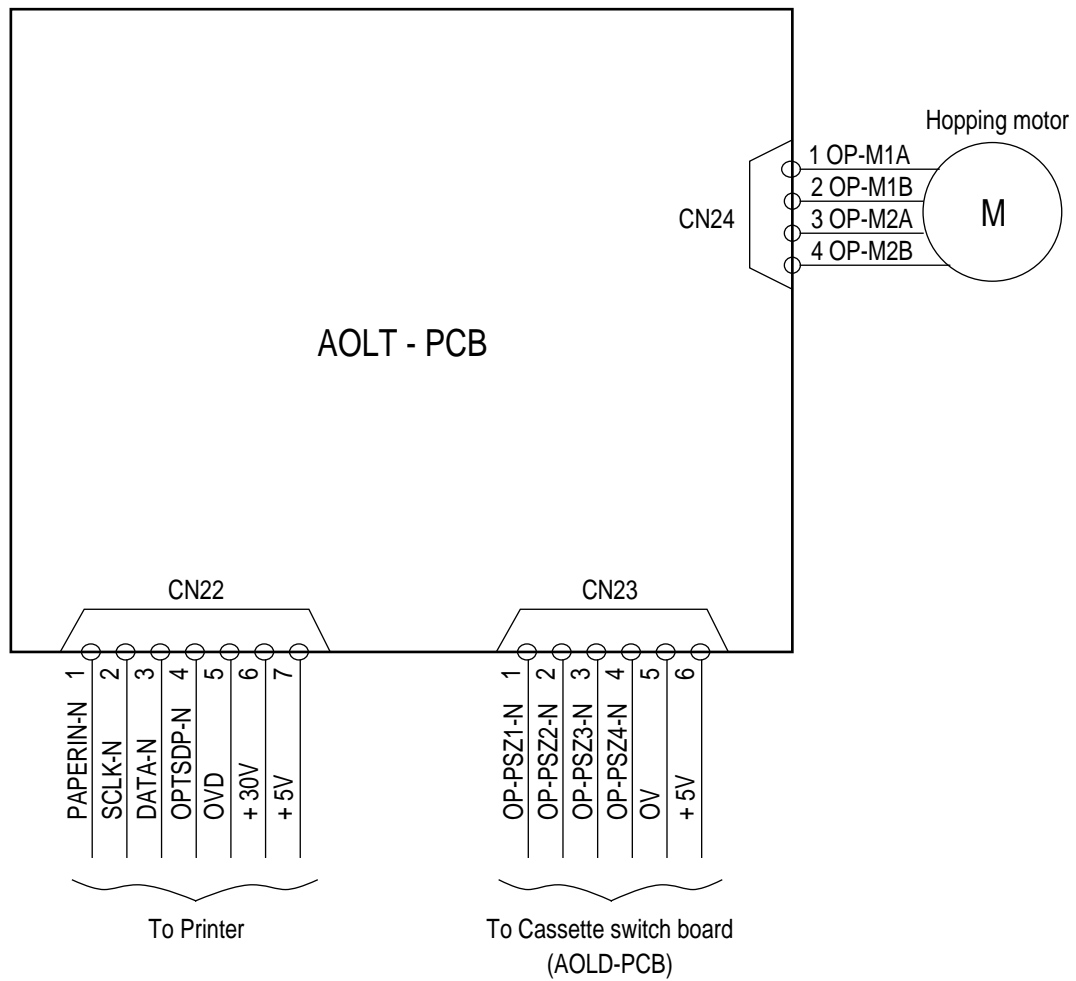
- (JAM error)

Paper Input Jam



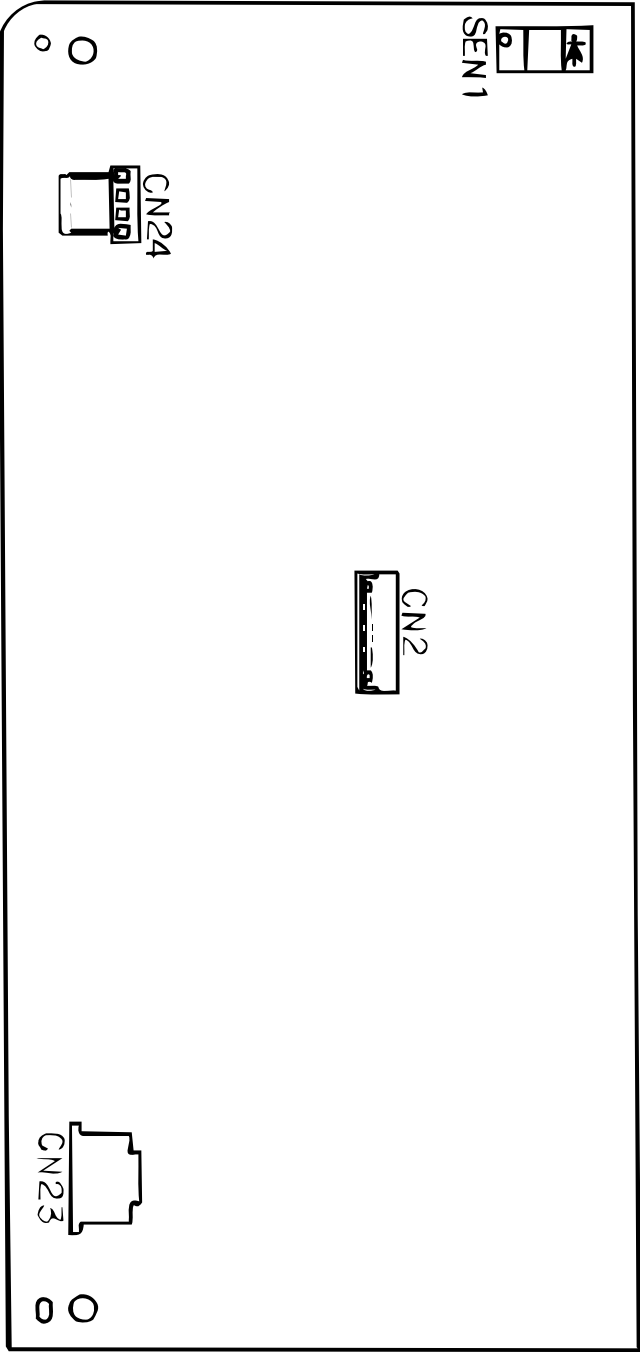
5. CONNECTION DIAGRAM

5.1 Interconnection Diagram



5.2 PCB Layout

AOLT-PCB



6. PARTS LIST

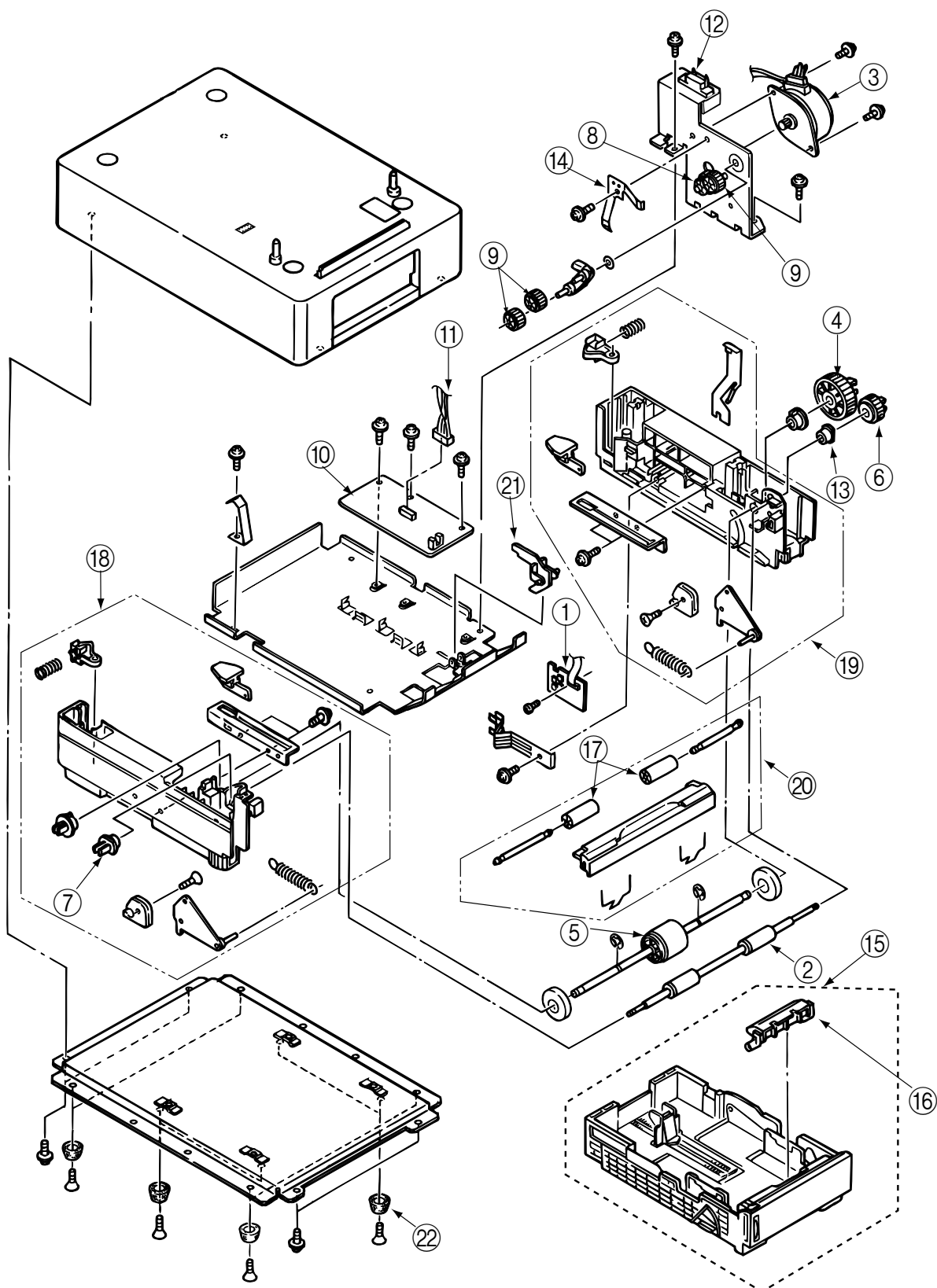


Table 6-1 High Capacity Second Paper Feeder

No.	Description	Part No.	Q'ty	Q'ty			Remarks
				500	1000	2000	
1	AOLD-PCB	4YA4046-1646G011	1	3	6	12	
2	Feed roller	3PB4076-5707P001	1	3	6	12	
3	Hopping motor	4PB4076-5718P001	1	3	6	12	
4	Hopping gear	4PB4043-4486P001	1	3	6	12	
5	Hopping roller assy	4PA4076-5775G001	1	3	6	12	
6	Feed roller gear	4PB4043-4488P001	1	3	6	12	
7	Feed roller bearing	4PP4043-4489P001	1	3	6	12	
8	Feed idle gear	4PP4076-5712P001	1	3	6	12	
9	Planet gear	4PP4043-4491P001	3	9	18	36	
10	AOLT-PCB	4YA4046-1645G011	1	3	6	12	
11	Connector cord	4YS4011-4448P003	1	3	6	12	
12	Square-shaped connector	220A1866P0141	1	3	6	12	
13	Bush	4PP4076-3949P001	1	3	6	12	
14	Shaft earth plate	4PP4076-5719P001	1	3	6	12	
15	Paper cassette assy	40744401	1	3	6	12	
16	Separator frame assy	40607001	1	3	6	12	
17	Idle roller	4PP4043-4477P001	1	3	6	12	
18	Frame assy-side L	40411901	1	3	6	12	
19	Frame assy-side R	40412001	1	3	6	12	
20	Holder assy-front panel	40727201	1	3	6	12	
21	Lever paper end	4PP4076-5154P001	1	3	6	12	
22	Rubber-Foot	40671001	8	24	48	96	